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THE JOURNAL

OF THE

ROYAL ANTHROPOLOGICAL INSTITUTE

OF

16821

GREAT BRITAIN AND IRELAND.



VOL. XLIX.

572.05
G.R.A.I.

PUBLISHED BY THE

Royal Anthropological Institute of Great Britain and Ireland,
50, GREAT RUSSELL STREET, LONDON, W.C. 1.

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- 1903 Burry, Miss B. Pullen-, *The Forum Club, 6 Grosvenor Place, W.1. (*)*
- 1906 Bushnell, David I., Esq., Junr., *The University, Virginia, U.S.A. (*¶)*
- 1913 Buxton, L. H. Dudley, Esq., *Dept. of Human Anatomy, University Museum, Oxford. (*)*
- 1913 Campbell, Dugald, Esq., *Garenganzi's Mission, Chilubula, near Lake Bangweolo, N. Rhodesia ; Newlands Drive, Partick, Scotland*.
- 1904 Campbell, Harry, Esq., M.D., *33 Cavendish Square, W. 1*.
- 1915 Capen, E. W., Esq., Ph.D., *Kennedy School of Missions, Hartford, Conn., U.S.A.*
- 1920 Cardinall, A. W., Esq., Assistant Commissioner, *N. Nigeria ; Springfield, The Weald, near Sevenoaks, Kent*.
- 1912 Carline, G. R., Esq., *Pitt Rivers Museum, Oxford*.
- 1913 Carr-Saunders, A. M., Esq., *Milton Heath, Dorking*.
- 1915 Chinnery, E. W. P., Esq., *Kokoda, Meryl Street, Malvern, Melbourne. (¶)*
- 1909 Cholmeley, E. H., Esq., B.A., *Solwezi, N.E. Rhodesia*.
- 1917 Cholmeley, Captain R. S., *The Duke of Wellington Regt., Sheffield, Yorks ; Place Newton, Rillington, York*.
- 1913 Christy, Miller, Esq., F.L.S., *Broomwood Lodge, Chignol St. James, Chelmsford*.
- 1874 Church, Sir William Selby, Bart., K.C.B., M.D., D.Sc., Ex-President R.C.P., *Woodside Place, Hatfield, Herts*.
- 1912 Churchill, W., Esq., *2928 Upton Street, Washington, U.S.A.*
- 1877 Clapham, Crochley, Esq., M.D., *The Gables, Mayfield, Sussex. (*¶)*
- 1911 Clark, Major J. Cooper, *Chelwood Corner, Nulley, Sussex*.
- 1914 Clark, W. E. Le Gros, Esq., R.F.C.S., *St. Thomas's Hospital, Westminster Bridge Road, S.E. 1*.
- 1909 Clarke, H. E., Esq., *Jerusalem*.
- 1913 Clarke, Louis C. G., Esq., *Berkeley House, Hay Hill, W*.

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- 1895 Clodd, Edward, Esq., *Strafford House, Aldeburgh, Suffolk.*
- 1863 Collingwood, J. Frederick, Esq., F.G.S., Foreign Assoc., Anthropol. Soc., Paris,
8 *Oakley Road, Canonbury, N. (*¶)*
- 1913 Coltart, Captain A. H., *Tubbs, Penshurst, Kent ; Junior United Service Club,
Charles Street, S.W. 1.*
- 1907 Colville, Ernest F., Esq., *The Residency, Port Herald, Nyassaland Protectorate ;
New University Club, S.W.*
- 1895 Corner, Frank, Esq., M.R.C.S., *Manor House, Poplar, E. (¶)*
- 1911 Coxhead, J. C. C., Esq., *Livingstone, N. Rhodesia. (¶)*
- 1912 Crawford, D., Esq., *Luanza Mission Station, Elizabethville, Congo Belgie, Africa.*
- 1893 Crombie, James Edward, Esq., *Parkhill House, Dyce, Aberdeen. (¶)*
- 1892 Crooke, William, Esq., B.A., D.Sc., C.I.E., *Langton House, Charlton Kings,
Cheltenham. (¶)*
- 1913 Cross, Mrs. H., "*Wayside*," *Pleasington, Lancs.*
- 1900 Crowfoot, J. W., Esq., M.A., *Khartoum, Sudan.*
- 1911 Cruickshank, J. G., Esq., *Audit Dept., British Guiana.*
- 1903 Cummins, Col. S. L., R.A.M.C., *Royal Army Medical College, Grosvenor Road,
S.W. 1. (¶§)*
- 1896 Cust, Miss M. E. V., F.R.G.S., *Twyford House, Fishpool Street, St. Albans.*
- 1914 Czaplicka, Miss Mary A., c/o *H. U. Hall, Esq., University Museum, Philadelphia.*
- 1911 Czekanowski, Dr. Ian, 8, *Dlugosz Str. Lemberg (Lwon), Poland.*
- 1895 Dalton, Ormonde Maddock, Esq., M.A., F.S.A., Corr. Mem. Soc. d'Anthrop,
Paris, *British Museum, Bloomsbury, W.C. (*¶)*
- 1902 Dames, M. Longworth, Esq., VICE-PRESIDENT, *Crichmere, Edgeborough Road,
Guildford. (¶§)*
- 1893 Davies, Rev. Prof. T. Witton, B.A. (Lond.), Ph.D. (Leipzig), D.D. (Geneva),
University College, Bangor, North Wales. ()*
- 1908 Dawkins, R. M., Esq., M.A., *Plas Dulas, Llanddulas, North Wales.*
- 1869 Dawkins, Sir W. Boyd, M.A., D.Sc., F.R.S., F.S.A., F.G.S., Honorary Professor
of Geology and Palæontology in the University of Manchester, *Fallowfield
House, Fallowfield, Manchester. (¶)*
- 1920 Dean, Edward, *Upper Lodge, Bushey Park, Hampton Hill, Middlesex.*
- 1904 Dennett, R. E., Esq., 42 *Lady Somerset Road, Highgate Road, N.W. 5.*
- 1912 Derry, Capt. D. E., M.B., Ch.B., R.A.M.C., *The Savage Club, 6 Adelphi Terrace,
W.C. ; Turf Club, Cairo. (¶)*
- 1913 Desai, Rao Bahadur Gobindbhai H., *Suba, Baroda, India.*
- 1915 Dickey, H. S., Esq., M.D., F.Z.S., F.R.G.S., *Highland Falls, N.Y., U.S.A.*
- 1907 Dixon, A. F., Esq., Sc.D., Professor of Anatomy, *Trinity College, Dublin. (*)*

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- 1908 Dixon, Dr. Roland, B., Instructor of Ethnology, *Harvard University, Cambridge, Mass., U.S.A.*
- 1920 Donohugh, Mrs. Agnes C. L., M.A., 31, *West 76th Street, New York City.*
- 1909 Dornan, Rev. S. S., *P.O. Box 106, Bulawayo, Rhodesia.* (¶)
- 1915 Driberg, J. H., Esq., *Arua, West Nile District, Uganda Protectorate.*
- 1899 Duckworth, W. L. H., Esq., M.A., M.D., Sc.D., *Jesus College, Cambridge.* (*¶)
- 1908 Duke, D., Esq., M.R.C.S., *Great Easton, Uppingham.*
- 1908 Durham, Miss M. Edith, *71 Belsize Park Gardens, N.W. 3* (¶§)
- 1911 During, C. D. H., Esq., F.R.G.S., *Ethgrace, 15 Pultney Street, Freetown, Sierra Leone.*
- 1901 Durnan, T., Esq., *Worsboro' House, Grove Road, Millhouses, Sheffield.*
- 1919 East, C. F. T., Esq., *St. Clare, Malvern; King's College Hospital, Denmark Hill.*
- 1919 East, C. H., Esq., M.D., *St. Clare, Malvern.*
- 1893 Ebbels, Arthur, Esq., *Tor Cottage, Temple Road, Epsom.*
- 1911 Edwards, Francis, Esq., *83A High Street, Marylebone, W.1.*
- 1906 Edwards, Brig.-General W. F. S., D.S.O., Inspector-General of Police, *Kampala, Uganda*
- 1905 Eliot, Sir Charles, K.C.M.G., C.B., M.A., LL.D., *The University, Hong Kong.*
- 1920 Elliott, Cyril T., Esq., *P.O. Box 5838, Johannesburg, Transvaal, South Africa.*
- 1919 Elliott, Miss L. E.
- 1909 Entwistle, Peter, Esq., Assistant Curator, *Mayer Museum, Liverpool.*
- 1907 Ernst, Mrs. Lucy Hoesch, Ph.D., *Villa Hoesch, Godesberg, Germany.*
- 1891 Evans, Sir Arthur J., M.A., LL.D., Litt.D., F.R.S., F.B.A., F.S.A.; Professor of Prehistoric Archaeology in the University of Oxford, *Youlbury, Oxford.* (¶)
- 1913 Evans, Oswald H., Esq., F.G.S., *Casilla 46, Valparaiso, Chile.*
- 1916 Evans, I. H. N., Esq., B.A., *Perak Museum, Taiping, Federated Malay States.* (¶)
- 1913 Evans, Major T. J., Carey, I.M.S., c/o Grindlay, Groom and Co., *Bombay, India; Llysmeddya, Blaenau Festiniog, N. Wales.*
- 1903 Fallaize, E. N., Esq., B.A., SECRETARY, *Vinchelez, Chase Court Gardens, Enfield.*
- 1900 Farnell, Lewis R., Esq., M.A., Litt.D., *Exeter College, Oxford.*
- 1911 Faulds, Henry, Esq., L.F.P.S., *Regent House, Regent Road, Hanley, Stoke-on-Trent.*
- 1880 Felkin, Robert William, Esq., M.D., F.R.G.S., *Waikare, R.A., Havelock North, New Zealand.*
- 1917 Fell, Rev. J. R., *Native Training Institute, Claxby Estate, Kafue, N. Rhodesia.*
- 1911 Fenton, C., Esq., *21 Mincing Lane, E.C. 3.*
- 1913 Fenton, Capt E. G., F.R.C.S.I., *2 Avoca Terrace, Blackrock, Co. Dublin.*
- 1908 Fenwick, N., Esq., Jun., *The Norfolk Hotel, Nairobi, East African Protectorate.* (¶)
- 1914 Ferreira, Dr. Antonio Aurelio da Costa, *Belem, Lisbon, Portugal.*

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- 1902 Ferrers, Earl, 35 *Victoria Road, Kensington, W.* 8.
- 1908 Ffoulkes, Colonel H. D., R.F.A., Resident, *Panshin, Banchi Province, N. Nigeria ; United Empire Club, 107 Piccadilly, W.* 1.
- 1916 Finlay, Douglas E., Esq., M.B., B.Sc. (London), M.R.C.S., L.R.C.P., *Wells Dene, Gloucester.*
- 1908 Fleure, Professor H. J., D.Sc., *Craig Fryn, Buarth Road, Aberystwyth.* (¶§)
- 1919 Fraser, J. S., Esq., M.B., c/o *H. S. King & Co., Pall Mall, S.W.* 1.
- 1885 Frazer, Sir James G., D.C.L., LL.D., Litt.D., 1 *Brick Court, Middle Temple, E.C.* 4 (¶§)
- 1907 Freire-Marreco, Miss Barbara W. (¶) *See Mrs. B. Aitken.*
- 1910 Fuller, A. W. F., Esq., 7 *Sydenham Hill, S.E.* 26. (§)
- 1902 Furness, W. H., Esq., M.A., M.D., *Wallingford, Pa., U.S.A.* (*¶)
- 1901 Gardiner, A. H., Esq., 9 *Lansdowne Road, Holland Park, W.* 11.
- 1916 Garfit, G. A., Esq., *Holmesfield, Sheffield.*
- 1914 Garrad, Barry L., Esq., B.A., 54 *Park Road, Westcliff-on-Sea.*
- 1913 Garrett, T. H., Esq., *Royal Societies' Club, St. James's Street, S.W. ; Digboi, Assam.*
- 1881 Garson, John George, Esq., M.D., Foreign Assoc., Anthropol. Soc., Paris ; Corr. Member Anthropol. Soc., Berlin, Moscow, Rome ; *Moorcote, Eversley, Winchfield, Hants.* (¶)
- 1913 Gask, G. E., Esq., F.R.C.S., 41 *Devonshire Place, Portland Place, W.* 1.
- 1907 Geddes, Rt. Hon. Sir A. Campbell, K.C.B., M.D., Ch.B., British Ambassador Extraordinary and Plenipotentiary, *Washington.*
- 1901 George, E. C. S., Esq., C.I.E., *Ruby Mines, Burmah.*
- 1907 Gibson, A. E. M., Esq., Barrister-at-Law, *Dorunkeh Chambers, Calabar, S. Nigeria.*
- 1913 Gibson, Sir Herbert, *Compton Hurst, Eastbourne.*
- 1901 Gladstone, R. J., Esq., M.D., 22 *Regent's Park Terrace, N.W.* 1. (¶)
- 1915 Glauert, L., Esq., Assistant Curator, *Western Australia Museum, Perth, W. Australia.*
- 1887 Gowland, W., Esq., F.R.S., V.-P.S.A., F.I.C., F.C.S., PAST PRESIDENT (1905-1907), Emeritus Professor of Metallurgy, Royal School of Mines, South Kensington, 13 *Russell Road, Kensington, W.* 14 (*¶§)
- 1905 Graham, W. A., Esq., *Bangkok, Siam ; 35 South Eaton Place, S.W.* 1.
- 1888 Greatheed, William, Esq., 67 *Chancery Lane, W.C.* 2.
- 1905 Green, F. W., Esq., M.A., *Jesus College, Cambridge.*
- 1899 Griffith, F. Llewellyn, Esq., 11 *Norham Gardens, Oxford.* (¶)
- 1913 Grimsdale, Harold B., Esq., M.B., F.R.C.S., 3 *Harley Place, W.* 1.
- 1905 Grist, C. J., Esq., M.A., *Smallfield, near Horley, Surrey.*

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- 1919 Grove, E. T. N., Esq., *The White House, Limpsfield, Surrey; Brooks's Club, St. James's Street, S.W. 1.*
- 1920 Grubb, Wilfrid B., Esq., *Springbank Lodge, Lasswade, Midlothian.*
- 1910 Gruning, E. L., Esq., *Hervey Islands, Cook Group, S.E. Pacific, via Raratonga.*
- 1917 Gunnell, A. Mortimer, Esq., F.R.Met.Soc., *Broomfield Park College, New Southgate, N. 11.*
- 1889 Haddon, Alfred C., Esq., M.A., Sc.D., F.R.S., M.R.I.A., PAST PRESIDENT (1901-1903), Reader in Ethnology in the University of Cambridge, Assoc. Anthropol. Soc. Paris; Corr. Mem. Anthropol. Soc. Berlin, Florence, Rome and Stockholm, 3 *Cranmer Road, Cambridge.* (*¶§)
- 1905 Haddon, E. B., Esq., B.A., *Gondokoro, via Khartûm.* (¶)
- 1913 Hambly, Wilfrid D., Esq., 172 *Canterbury Road, Leyton, E. 10.*
- 1911 Hamilton-Grierson, Sir Philip, 7 *Palmerston Place, Edinburgh.*
- 1902 Harrison, Alfred C., Esq., 1616 *Locust Street, Philadelphia.* (*)
- 1911 Harrison, C., Esq., 81, *Highbury Hill, N. 5*
- 1904 Harrison, H. S., Esq., D.Sc., *The Horniman Museum, Forest Hill, S.E.; 8 Gaynesford Road, Forest Hill, S.E. 23.* (§)
- 1897 Hartland, E. S., Esq., LL.D., F.S.A., *Highgarth, Gloucester.* (*¶)
- 1905 Hastings, Rev. J., D.D., *Kingsgate, Aberdeen.*
- 1902 Haviland, H. A., Esq., M.D., *Normans, Rusper, Sussex.*
- 1905 Hay, Matthew, Esq., M.D., Professor of Forensic Medicine, *The University, Aberdeen.*
- 1913 Haywood, C. W., Esq., *East African Estates, Limited, Gazi, Mombasa, British East Africa.*
- 1885 Heape, C., Esq., *High Lane, near Stockport.*
- 1910 Heimbrod, G., Esq., *P.O. Nadi, Fiji (via Lautaka).*
- 1920 Hemming, Arthur G., Esq., F.I.A., F.S.S., *Cambridge Lodge, Horley, Surrey.*
- 1919 Hesling, C. W., Esq., c/o Government Oil Fields, Upoia, Vailalla, Papua.
- 1895 Hickson, Prof. S. J., D.Sc., F.R.S., *The University, Manchester.* (*)
- 1909 Higgins, H., Esq., *Ronaleyn, Trefriw, North Wales.*
- 1906 Hildburgh, W. L., Esq., M.A., Ph.D., F.S.A., *Knightsbridge Hotel, Knightsbridge, S.W. 1.* (¶)
- 1913 Hill, G. W., Esq., 21 *West Hill, Highgate, N. 6.*
- 1913 Hill, H. Brian C., Esq., 30th *Lancers, c/o Messrs. King, Hamilton and Co., Calcutta, India.*
- 1920 Hillelson, Sidney H., Esq., *Gordon College, Khartoum.*
- 1906 Hilton-Simpson, Melville W., Esq., F.R.G.S., *Sole Street House, Faversham, Kent.*
- 1916 Hitchins, A. B., Esq., A.M., D.Sc., Ph.D., c/o *Ansco Co. Research Laboratory, Binghamton, N.Y.*

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- 1919 Hoare, F. R., Esq., 1 *Staple Inn*, W.C. 1.
- 1909 Hocart, A. M., Esq., 74 *Southmoor Road*, Oxford. (¶)
- 1919 Hodgson, A. G. O., Esq., *A.P.O., Dar-es-Salaam, East Africa ; Royal Societies Club, St. James's Street*, S.W. 1.
- 1918 Hodgson, T. V., Esq., *Museum and Art Gallery*, Plymouth.
- 1906 Hodson, Col. T. C., 10 *Wood Lane*, Highgate N. 6. (¶)
- 1919 Hoffman, F. L., Esq., *The Prudential Insurance Co. of America Home Office*, Newark, New Jersey.
- 1914 Hollobone, Henry E. W., Esq., 129 *Vassall Road*, Brixton, S.W.9.
- 1910 Holmes, Harold, Esq., *Cherryford-in-Martinhoe*, Parracombe, N. Devon.
- 1881 Holmes, T. V., F.G.S., 28 *Croom's Hill*, Greenwich, S.E. 10. (¶)
- 1915 Homer, Thomas, Esq., L.R.C.S., L.R.C.P. (Edin.), *Blackford*, Perthshire.
- 1915 Honter, R. F., Esq., Director of Education, *Sierra Leone, W. Africa*.
- 1913 Hooton, E. A., Esq., Ph.D., *Peabody Museum, Harvard University, Cambridge, Mass., U.S.A.*
- 1915 Hopkins, J. Esq., F.R.C.S., *Hamercot, Esher Avenue*, Walton-on-Thames.
- 1919 Hornell, James, Esq., Director of Fisheries, *Madras*.
- 1918 Hough-Love, Percy R., Esq., *Queen Elizabeth's School*, Cranbrook, Kent.
- 1896 Howorth, Sir Henry H., K.C.I.E., D.C.L., F.R.S., F.S.A., 45 *Lexham Gardens*, W. 8. (¶)
- 1918 Hudspeth, Capt. W. H., 48 *Belmont Gardens*, West Hartlepool.
- 1879 Hügel, Baron A. von, *Museum of Archæology and Ethnology*, Downing Street, Cambridge. (¶)
- 1920 Hunt, Richard J., Esq., *Leighton Mount*, 117 *Waverley Road*, Reading.
- 1912 Hunt, Walter, Esq., 43 *Eardley Road*, Streatham, S.W. 16.
- 1898 Hutchinson, Rev. H. Neville, M.A., F.R.G.S., F.G.S., F.Z.S., 17 *St. John's Wood Park, Finchley Road*, N.W. 8.
- 1912 Hutchinson, W., Esq., B.A., F.R.G.S., F.Z.S., 34-36 *Paternoster Row*, E.C. 4.
- 1913 Hutton, J. H., Esq., I.C.S., Assistant Commissioner, *Mokokchung, Naga Hills, Assam, India*. (¶)
- 1898 Iles, George, Esq., c/o *Public Library, Ottawa, Canada*. (*)
- 1915 Ishii, S., Esq., 9 *Sukiyacho, Nihonbashiku, Tokyo, Japan*.
- 1863 Jackson, Henry, Esq., O.M., Litt.D., M.A., F.B.A., Regius Professor of Greek in the University of Cambridge, *Trinity College, Cambridge*. (*)
- 1912 Jackson, H. C., Esq., *Sudan Civil Service, Impens, North Petherton, Somerset*.
- 1915 James, Rev. Edwin O., *St. Peter's Vicarage, Limehouse*, E. 14.
- 1872 Jeaffreson, W. J., Esq., M.A. (*)
- 1869 Jeffery, F. J., Esq. (*)
- 1918 Jenkinson, Mrs. Constance, 27 *Polstead Road*, Oxford.

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- 1919 Jenness, D., Esq., M.A., *Victoria Memorial Museum, Ottawa.*
- 1916 Johnson, H. J. T., Esq., *Oak Hurst, near Derby.*
- 1885 Johnston, Sir H. H., G.C.M.G., K.C.B., D.Sc., F.Z.S., *St. John's Priory, Poling, Arundel.* (¶)
- 1901 Johnstone, H. B., Esq., B.A., H.B.M., *Vice-Consul, Mogador, Morocco.*
- 1914 Jones, Major D. Hedog, M.A., B.Sc., c/o Rev. Canon Martin, *Kelloe Vicarage, Coxhoe, Co. Durham.*
- 1914 Jones, H. Sefton, Esq., 18 *Pembroke Gardens, W. 8.*
- 1910 Jones, F. W., Esq., *The University, Adelaide, S. Australia.*
- 1917 Jones, Mrs. G. C. Wood, *The University, Adelaide, S. Australia.*
- 1919 Jons, F. G., Esq., 25 *West Mall, Clifton, Bristol.*
- 1902 Joyce, Capt. T. A., M.A., O.B.E., *British Museum, W.C. ; 16 York Mansions, Battersea Park, S.W. 14.* (¶§)
- 1905 Joyce, T. Heath, Esq., *The Royal Albert Yacht Club, Southsea.*
- 1907 Judge, James J., Esq., 2 *Apsley Road, Plymouth.*
- 1913 Julian, Mrs. Hester, *Redholme, Torquay.*
- 1896 Keith, A., Esq., M.D., F.R.C.S., LL.D., F.R.S., PAST-PRESIDENT (1913-16),
Conservator of the Museum, Royal College of Surgeons ; 17 *Aubert Park, Highbury, N. 5.* (¶§)
- 1919 Kendrick, T. D., Esq., *The Old Rectory, Madresfield, Malvern.*
- 1911 Khan, S. S., Esq., *Medical College, Lucknow, India.*
- 1911 Kidd, Lt.-Col. A. E., R.A.M.C., *Fernlea, William Street, Dundee.*
- 1911 Kirkpatrick, W., Esq., *P.O. Box 46, Calcutta, India ; Avondale, Moalcroft Road, Eastbourne.*
- 1914 Kittredge, T. B., Esq., *U.S. Navy, Naval War College, Newport, Rhode Island, U.S.A.*
- 1891 Kitts, Eustace John, Esq., *Dudley Hotel, Hove, Sussex.* (*)
- 1902 Kloss, Cecil B., Esq., F.Z.S., *Kuala Lumpur, Federated Malay States.*
- 1914 Knight, Lieut.-Col. C. Morley, D.S.O., *Naval and Military Club, Piccadilly, W. 1.*
- 1909 Knowles, F. H. S., Esq., M.A., *Anthropological Division, Victoria Museum, Ottawa, Canada.*
- 1881 Knowles, W. J., Esq., *Flixton Place, Ballymena, Co. Antrim.* (¶)
- 1915 Laidler, P. W., Esq., L.D.S., *Seaford, Main Road, Sea Point, Cape Province, S. Africa.*
- 1918 Lake, Miss Hilda A., *Heage House, Crouch Hill, N. 4.*
- 1914 Lamb, Miss M. Antonia, 212 *South 46th Street, Philadelphia, Penn., U.S.A.*
- 1920 Lander, Miss Kathleen F., 69, *Albany Street, N.W. 1.*
- 1913 Landtman, Dr. Gunnar, 9 *Wladimir Street, Helsingfors, Finland.* (¶)

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Election.

- 1888 Law, Walter W., Esq., *Scarborough, New York, U.S.A.* (*)
- 1920 Lawford, H. E., Esq., 5 *Buckingham Palace Mansions, S.W. 1.*
- 1885 Lawrence, E., Esq., *St. Albans, Chalkwell Gardens, Westcliff-on-Sea.* (*)
- 1916 Layard, J. W., Esq., *King's College, Cambridge.*
- 1904 Lennox, D., Esq., M.D., *Tayside House, 162 Nethergate, Dundee.* (*)
- 1909 Leveson, H. G. A., Esq., M.R.A.S., F.R.G.S., *East India United Service Club, St. James's Square, S.W.; 2 Edwardes Place, Kensington Road, W. 8.* (§)
- 1866 Lewis, A. L., Esq., F.C.A., Officier d'Académie, 35 *Beddington Gardens, Wallington, Surrey.* (*¶§)
- 1920 Lloyd, Mrs. C. M., *Beech Croft, Sands, High Wycombe.*
- 1919 Lloyd, G. T., Esq., I.C.S., c/o *Postmaster, Shillong, Assam.*
- 1914 Loé, Baron Alfred de, Curator of Department of Prehistoric Antiquities, *Musées Royaux du Cinquantenaire, Brussels, Belgium.*
- 1918 Long, Richard C. E., Esq., *Portarlinton, Ireland.*
- 1893 Longman, Charles James, Esq., M.A., 27 *Norfolk Square, W. 2.* (*)
- 1920 Longman, H. A., Esq., Director, *Queensland Museum, Brisbane, Australia.*
- 1917 Lyle, Miss Margaret Y., *Elmer, Leatherhead.*
- 1920 Lyons, A. P., Esq., *Daru, Papua, via Port Moresby.*
- 1918 Lyttle, Capt. W., c/o *Mrs. James McMullan, Chefoo, China.*
- 1901 Mace, A., Esq., 14 *Hill Road, St. John's Wood, N.W. 8.*
- 1913 MacGregor, G. Laird, Esq., I.C.S., c/o *Messrs. Grindlay & Co., 84 Parliament Street, S.W. 1.*
- 1919 MacGregor, R. R. I., Esq., *Hamilton High School, Daikato, New Zealand.*
- 1918 MacHugh, Lt.-Col. R. J., 34, *Denbigh Street, S.W. 1.*
- 1899 MacIver, Capt. David Randall-, M.A., D.Sc., F.S.A., F.R.G.S., 131 *East 66th Street, New York.*
- 1904 Mackay, J., Esq., *Craig-ard, Farcliffe Road, Bradford.*
- 1910 Mackintosh, J. S., Esq., M.D., 2 *Platt's Lane, Hampstead, N.W. 3.*
- 1908 MacMichael, Capt. H. A., D.S.O., Assistant Chief Secretary, *Khartoum, Sudan.* (¶)
- 1885 MacRitchie, David, Esq., F.S.A. Scot., 4 *Archibald Place, Edinburgh.* (¶)
- 1911 Malcolm, Capt. L. W. G., R.G.A., *Christ's College, Cambridge.*
- 1881 Man, E. H., Esq., C.I.E., *St. Helen's, Preston Park, Brighton.* (¶)
- 1913 Mann, F. W., Esq., *Devonshire Club, St. James's Street, S.W. 1.*
- 1896 Maret, R. R., Esq., M.A., D.Sc., Reader in Anthropology in the University of *Oxford, Exeter College, Oxford.* (*¶)
- 1905 Marten, R. H., Esq., M.D., 12 *North Terrace, Adelaide, South Australia.*
- 1920 Martindell, Capt. E. W., M.A., *Chelston, Ashford, Middlesex.*
- 1894 Maudslay, A. P., Esq., M.A., D.Sc., F.S.A., F.R.G.S., PAST PRESIDENT (1911-12), *Morney Cross, Hereford.* (¶§)

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Election.

- 1912 Maxwell, J. C., Esq., Colonial Secretary, *Sierra Leone*.
- 1920 Maynard, Guy, Esq., *The Natural History Museum, High Street, Ipswich*.
- 1911 McConnell, R. E., Esq., B.A., M.D., Uganda Medical Service, *Jinja, Uganda*.
- 1910 McDougall, William, Esq., M.A., 89 *Banbury Road, Oxford*. (¶)
- 1920 McIlwraith, T. F., Esq., *St. John's College, Cambridge ; Hamilton, Canada*.
- 1913 McLean, W., Esq., M.B., *Seaforth Sanatorium, Conon Bridge, Ross-shire*.
- 1915 Means, P. A., Esq., 196 *Beacon Street, Boston, U.S.A.*
- 1915 Mechling, W. H., Esq., *The Bartram, Chestnut and 33rd Street, Philadelphia*.
- 1904 Melland, Frank H., Esq., *Livingstone, Northern Rhodesia*.
- 1918 Menon, V. K., Esq., c/o H.H. The Rajah of Cochin, *Cochin State, India*.
- 1916 Meredith, Rev. F. C., F.R.G.S., *American Church Mission, 46 Tera Machi, Aomori, Japan*.
- 1908 Merivale, Reginald, Esq., 268 *St. James's Court, Buckingham Gate, S.W. 1*.
- 1877 Messer, A. B., Esq., M.D., Inspector-General of Hospitals and Fleet, *Kinclune, Carlisle Road, Eastbourne*. (*¶)
- 1914 Migeod, F. W. H., Esq., *Northcote, Christchurch Road, Worthing*.
- 1919 Mills, J. P., Esq., I.C.S., *Mokokchung, Naga Hills, Assam, India*.
- 1910 Milne, Mrs. M. L., 19 *Murrayfield Avenue, Edinburgh*.
- 1908 Milton, J. H., Esq., *Harrison House, College Avenue, Crosby, Liverpool*.
- 1916 Milward, Graham, Esq., 77 *Colmore Row, Birmingham*.
- 1914 Moir, J. Reid, Esq., *One House, Henley Road, Ipswich*. (¶)
- 1919 Monckton, Capt. C. A. W., 12, *The Beach, Walmer*.
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- 1913 Morley, Bernard, Esq., *Cable Station, Labuan*.
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- 1920 Mumford, Capt. P. S., c/o *Treasurer, Zanzibar, East Africa*.
- 1908 Munro, N. Gordon, Esq., M.D., 91 *Bluff, Yokohama*.
- 1885 Munro, R., Esq., M.A., M.D., LL.D., F.R.S.E., *Elmbank, Largs, Ayrshire, N.B.* (*¶)
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- 1871 Murray, Adam, Esq., F.G.S. (*)
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- 1909 Myers, Henry, Esq., *Ebbisham Lodge, Downs Avenue, Epsom, Surrey*.

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Election.

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- 1915 Brighton Public Library, Museums and Fine Art Galleries, *Brighton.*
- 1909 The Oxford University Anthropological Society, c/o R. R. Marett, Esq., M.A., *Exeter College, Oxford.*
- 1912 The London School of Economics, *Clare Market, W.C.*

SOCIETIES, ETC., EXCHANGING PUBLICATIONS
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— Royal Irish Academy.
— Royal Society of Antiquaries.
Edinburgh...Royal Scottish Geographical Society.
— Royal Society of Edinburgh.
— Society of Antiquaries of Scotland.
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London...African Society.
— British Medical Association.
— British Psychological Society.
— Egypt Exploration Society.
— Folklore Society.
— Geologists' Association.
— Hellenic Society.
— Subject Index to Periodicals.

London...India Office, Whitehall.
— Japan Society.
— Nature.
— Palestine Exploration Fund.
— Quatuor Coronati Lodge, No. 2076.
— Royal Archaeological Institute.
— Royal Asiatic Society.
— Royal Colonial Institute.
— Royal Geographical Society.
— Royal Society.
— Royal Society of Literature.
— Royal Statistical Society.
— Royal United Service Institution.
— Science Progress.
— Society of Antiquaries.
Taunton ... The Somersetshire Archaeological Society.
Truro...Royal Institution of Cornwall.

EUROPE.

AUSTRIA-HUNGARY.

Agram...Kroätische Archäologische Gesellschaft.
Budapest ... Magyar Tudományos Akadémia.
— Magyar Nemzeti Néprajzi Östálya.
Cracow...Akademija Umiejtnosci.
Sarajevo...Landesmuseum (Wissenschaftliche Mittheilungen aus Bosnien).
Vienna...Anthropologische Gesellschaft.
— K. Akademie der Wissenschaften.

BELGIUM.

Brussels...Académie Royale des Sciences.
— Collection de Monographies Ethnographiques.
— Instituts Solvay.
— Société d'Anthropologie de Bruxelles.
— Société d'Archéologie de Bruxelles.

DENMARK.

Copenhagen...Société des Antiquaires du Nord.

FRANCE.

Lyon...Société d'Anthropologie de Lyon.
Paris...L'Anthropologie.
— École d'Anthropologie.

Paris...Revue de l'Histoire des Religions.
— Soc. des Americanistes.
— Société d'Anthropologie.
— Année Sociologique.

GERMANY.

Berlin...Berliner Gesellschaft für Anthropologie, Ethnologie, und Urgeschichte.
— K. Museum für Völkerkunde.
— Seminar für Orientalische Sprachen.
Brunswick...Zentralblatt für Anthropologie, etc.
Cologne...Rautenstrauch-Joest-Museum.
Giessen...Hessische Blätter.
Gotha...Petermanns Mitteilungen.
Halle-a-d-Saale...Kaiserliche Leopoldina Carolina Akademie der Deutschen Naturforscher.
— Deutsche Morgenländische Gesellschaft.
Kiel...Anthropologischer Verein für Schleswig-Holstein.
Leipzig ... Archiv für Religionswissenschaft.
— Archiv für Rassen und Gesellschaft Biologie.

22 *Societies, etc., Exchanging Publications with the Royal Anthropological Institute.*

Leipzig...Verein für Erdkunde.

— Orientalisches Archiv.

Munich ... Deutsche Gesellschaft für Anthropologie, Ethnologie, und Urgeschichte.

Stuttgart...Zeitschrift für Morphologie und Anthropologie.

GREECE.

Athens...Ephemeris Archaïologikè.

— Annual of * the British School of Archæology

ITALY.

Florence...Società Italiana di Antropologia, Etnologia, e Psicologia Comparata.

Rome...Accademia dei Lincei.

— Società Romana di Antropologia.

Turin...Archivio di Psichiatria.

NETHERLANDS.

Amsterdam...Koninklijke Akademie van Wetenschappen.

— Publications of the Koloniaal Instituut, Amsterdam.

Leiden ... Internationales Archiv für Ethnographie.

The Hague...Koninklijk Instituut voor de Taal-, Land-, en Volkenkunde van Nederlandsch Indië.

RUSSIA.

Dorpat...Publications of the University.

Helsingfors...Suomen Muinaismuistoyhdistyksen Arkakauskirja (Journal of the Finnish Archæological Society).

Moscow...Imper. Obshchestvo Lubitelei Iestestvoznania, Antropologii, i Etnografii.

St. Petersburg...Imper. Akademia Nauk.

SWEDEN.

Stockholm ... Academy of Antiquities, National Museum.

— Nordiska Museet.

— Ymer.

Uppsala...La Bibliothèque, l'Université Royale.

SWITZERLAND.

Neuchâtel ... Soc. Neuchateloise de Géographie.

Zurich...Musée National Suisse

AFRICA.

CAPE COLONY.

Cape Town...Royal Society of South Africa.

Transvaal, Johannesburg ... The South African Institute for Medical Research.

EGYPT.

Cairo...Société Sultanieh de Géographie.

Giza...Archæological Survey of Nubia.

Khartum...Wellcome Laboratory Reports.

AMERICA.

ARGENTINE.

La Plata...Museum.

BRAZIL.

Rio de Janeiro...Museu Nacional.

CANADA.

Ottawa...Royal Society of Canada.

Toronto...Canadian Institute.

UNITED STATES.

Berkeley, Cal....University of California.

Cambridge, Mass. ... Peabody Museum, Science.

Chicago...Field Museum.

Lancaster, Pa. ... American Folklore Society.

New York...American Museum of Natural History.

New York...Columbia University.

Philadelphia...University Museum.

Washington...American Anthropologist.

— American Journal of Physical Anthropology.

— Bureau of Ethnology

— Smithsonian Institution.

— United States Geological Survey.

— United States National Museum.

Worcester, Mass....American Journal of Psychology.

ASIA.

CHINA.

Shanghai...Royal Asiatic Society (China branch).

INDIA.

Bombay...Anthropological Society.

— Indian Antiquary.

— Royal Asiatic Society.

Calcutta...Bengal Asiatic Society.

Colombo...Royal Asiatic Society (Ceylon branch).

Ranchi...Behar and Orissa Research Society.

Rangoon...Burma Research Society.

Simla—Archæological Reports.

JAPAN.

Tokio...Asiatic Society of Japan.

— Tokio-Daigaku (Imperial University).

JAVA.

Batavia...Bataviaasche Genootschap van Kunsten en Wetenschappen.

SIAM.

Bangkok...National Library.

STRAITS SETTLEMENTS.

Singapore...Royal Asiatic Society (Straits Branch).

AUSTRALIA AND PACIFIC.

Honolulu ... Bernice Pauahi Bishop Museum.

Melbourne...Royal Society of Victoria.

New Plymouth, N.Z.—Polynesian Society.

Sydney...Australian Museum.

Sydney...Australasian Association for the Advancement of Science.

— Royal Society of New South Wales.

Wellington, N.Z....New Zealand Institute.

— Dominion Museum.

EXCHANGES FOR "MAN."

ENGLAND.

Hull...The Naturalist.

Liverpool...Institute of Tropical Research.

— Journal of the Gypsy Lore Society.

London...Annals of Psychical Science.

— British Association.

— Church Missionary Review.

— Eugenics Review.

— Journal of the East India Association.

— Lancet.

— Reliquary and Illustrated Archæologist.

— Saga-Book of the Viking Club.

— Science Progress.

— Sociological Review.

— South American Missionary Society.

ARGENTINE.

La Plata...Museum.

AUSTRIA-HUNGARY.

Budapest...Magyar Nemzeti Museum

Kolozsvár...Dolgozatok.

Lwow (Lemberg)...Ludu.

Mödling...Anthropos.

Uh. Hradiště...Pravěk.

BELGIUM.

Brussels...Bulletin de la Société d'Études Coloniales.

— Bull. de la Soc. Géographie.

— Instituts Solvay.

— La Revue Congolaise.

— Missions Belges.

FRANCE.

Dax...Société de Borda.

Paris...L'Anthropologie.

— La Nature.

— La Revue Préhistorique.

— L'Ethnographie.

— L'Homme Préhistorique.

— Revue des Études Ethnographiques

— Revue des Traditions Populaires.

— Société Préhistorique Française.

— Statistique Générale de la France.

GERMANY.

Danzig...West Preussisches Provincial-Museum.
Dresden...Bericht des Vereins für Erdkunde.
Frankfurt a/M...Völker-Museum.
Giessen...Hessische Blätter.
Gotha...Petermanns Mitteilungen.
Guben...Niederlauitzer Mitteilungen.
Hamburg...Museum für Völkerkunde.
Kiel...Mitteilungen des Anthropologischen Vereins in Schleswig-Holstein.
Munich...Correspondenzblatt.
— Geographische Gesellschaft.
— Prähistorische Blätter.
Nürnberg ... Bericht der Natur-historischen Gesellschaft.

INDIA.

Simla...Archæological Reports.
Lahore...Punjab Historical Society.
Poona...Bhandarkar Oriental Research Institute.

ITALY.

Como...Rivista Archeologica della Provincia de Como.
Rome...Rivista Italiana di Sociologia.
— Reale Societa Geografica Italiana.

AFRICA.

Natal, Pietermaritzburg...Museum.
Egypt, Khartoum ... Sudan Notes and Records.

NETHERLANDS.

Amsterdam...Nederlandsch Indie, Oud und

Tahiti, Papeete...Bulletin de la Société d'Etudes Océaniques.

NORWAY.

Trondhjem...K. Norske Videnskabers Selskab.

PORTUGAL.

Lisbon...Archeologo Português.

RHODESIA.

Bulawayo...Proceedings of the Rhodesian Scientific Association.

SPAIN.

Barcelona...Estudis I. Materials.

SWEDEN.

Uppsala...La Bibliotheque, L'université Royale.

SWITZERLAND.

Basel...Naturforschenden Gesellschaft.
Zürich...Schweizerisches Archiv für Volkskunde.
— Jahresbericht der Schweiz-Gesellschaft für Urgeschichte.
Geneva...L'Institut Suisse d'Anthropologie Générale.

UNITED STATES.

Berkeley, Cal....University.
Boston...American Journal of Archæology.
Chicago...Open Court.
New York ... American Museum of Natural History.
— Science.
Philadelphia...Proceedings of American Philosophical Society.
Washington ... Bureau of American Ethnology.

SUBSCRIBERS TO PUBLICATIONS OF THE INSTITUTE.

Basle. The University.
Birmingham. Central Free Library.
— University Library.
Cairo. School of Medicine.
Coimbra. Museu Antropologico.
Cork. University College.
Glasgow Mitchell Library.
Liverpool. Free Museum.
London. Guildhall Library.
— Horniman Museum.
— London Library.
Lucknow. Provincial Museum.
Madras. Connemara Public Library.

Madras. Archæological Survey.
Michigan. University.
Newcastle. Public Library.
New York. Cornell University.
Ottawa. Geological Survey.
— Library of Parliament.
Pekin. Government University.
Salford. Royal Museum.
Tokyo. Imperial University.
Vancouver. University of British Columbia.
Victoria, B.C. Provincial Library.

JOURNAL
OF THE
ROYAL ANTHROPOLOGICAL INSTITUTE
OF GREAT BRITAIN AND IRELAND.

MINUTES OF THE ANNUAL GENERAL MEETING,
TUESDAY, JANUARY 28TH, 1919, AT THE ROOMS OF THE INSTITUTE,
50, GREAT RUSSELL STREET, W.C.

SIR HERCULES READ, *President, in the Chair.*

The Minutes of the last Annual General Meeting were read and accepted.

The PRESIDENT appointed Mr. H. J. E. PEAKE and Mr. CARLINE as Scrutineers, and declared the ballot open.

The HONORARY SECRETARY read the Report of the Council for 1918, and on the motion of Mr. SCORESBY ROUTLEDGE, seconded by Mr. A. L. LEWIS, this was accepted.

In the absence of the TREASURER, his Report was read by the HONORARY SECRETARY. On the motion of Dr. MAUDSLAY, seconded by Mr. N. F. ROBARTES, the Report was accepted.

The PRESIDENT then delivered his Address on "Anthropology and War."

The SCRUTINEERS handed in their Report on the ballot, and the following were declared to be duly elected as Officers and Council for 1919-20.

President.—Sir Everard im Thurn, K.C.M.G., C.B.

Vice-Presidents.

M. Longworth Dames.
S. H. Ray, M.A.

| W. H. R. Rivers, M.A., M.D., F.R.S.
|

Hon. Secretary.—H. S. Harrison, D.Sc.

Hon. Treasurer.—R. W. Williamson, M.Sc.

Council.

Capt. F. R. Barton, C.M.G.
L. C. G. Clarke.
Miss M. E. Durham.
W. L. H. Duckworth, M.A., M.D., Sc.D.
Sir J. G. Frazer, D.C.L., LL.D., Litt.D.
Capt. A. W. F. Fuller.
R. J. Gladstone, M.D.
W. L. Hildburgh, M.A., Ph.D., F.S.A.
Capt. T. A. Joyce, M.A., O.B.E.
H. G. A. Leveson, M.R.A.S., F.R.G.S.
A. L. Lewis, F.C.A.

Miss M. A. Murray.
E. A. Parkyn, M.A.
Prof. F. G. Parsons, F.R.C.S.
W. P. Pycraft, A.L.S.
Capt. C. G. Seligman, M.D.
F. C. Shrubsall, M.A., M.D.
Lt.-Col. L. A. Waddell, C.B., C.I.E.,
LL.D.
S. Hazzledine Warren, F.G.S.
Prof. W. Wright, M.B., D.Sc., F.R.C.S.,
F.S.A.

A vote of thanks to the PRESIDENT for his Address was proposed by DR. MAUDSLAY, who also asked that the best thanks of the Institute should be given to the PRESIDENT for consenting to take office again, and for his valuable services to the Institute at a difficult period.

The proposals were seconded by Mr. A. L. LEWIS and carried by acclamation.

The Institute then adjourned.

REPORT OF THE COUNCIL FOR THE YEAR 1918.

THE effect of the continuance of the war upon the activities of the Institute were even more marked in 1918 than in the previous year, and in regard to the publications of the Institute the full effect has unfortunately not yet been exhausted. The increased cost of printing, of all office materials, of postage and carriage, and of other essentials, has rendered it necessary to exercise the greatest possible economy in all directions. It is hoped that Fellows will realise that the need for such economy is imperative, and that they will understand that steps which may cause them temporary inconvenience are taken with reluctance.

All meetings have been held in the rooms of the Institute, but the Council hopes that it may be possible to make better arrangements for some, at least, of the meetings during 1919. As was the case in 1917, the number of meetings has been small, but in this respect also an improvement may be hoped for during 1919.

As regards the two parts of the *Journal* issued during the year, the normal size has been maintained, but owing to the very great increase in the cost of printing and paper, the Council has been compelled reluctantly to decide that the next part of the *Journal* to be published must be of considerably smaller size than its immediate predecessors. How soon it will be possible to return to the normal size depends mainly upon the future conditions in the printing trade.

As will be seen from the following table, a net reduction has to be recorded of two Honorary Fellows, two Compounding Fellows and seven Local Correspondents, and an increase of two Subscribing Fellows.

	Total Jan. 1st, 1918.	Loss by death or resignation.	Since elected.	Total Jan. 1st, 1919.
Honorary Fellows	42	4	2	40
Local Correspondents	31	13	—	18
<i>Deduct also Ordinary Fellows</i>	9			3
	— 22			— 15
Affiliated Societies	3	—	—	3
Affiliated Members	1	—	—	1
Ordinary Fellows:—				
Compounding	64	3	1	62
Subscribing	377	15	17	379
Total Membership	509			500

The losses which the Institute has suffered through death are the following:—
 Dr. D. Deniker (elected 1895, Obituary notice appeared in *Man*, 1918, 39), Professor J. Kollman (elected 1886), Professor J. Ranke (elected 1886), Professor Dr. Gustav Schwalbe (elected 1909), Mr. E. J. Barron (elected 1876), Lieut.-Colonel W. H. Baxter (elected 1904), Lieut. W. Beaver (elected 1913), Mr. W. Crewdson (elected 1907), Major Cooke Daniels (elected 1902); Mr. E. Dayrell (elected 1909), Major F. Bennett Goldney, M.P. (elected 1903), Lieut.-Colonel F. G. Shaw (elected 1866), Sir J. Tata, J.P. (elected 1906), Mr. A. H. Turnbull (elected 1912).

MEETINGS.

The number of ordinary meetings held was three, as compared with six in 1917. Two papers were read, of which one was archæological, and the other on physical anthropology. At a joint meeting with the Prehistoric Society of East Anglia, a paper on an archæological subject was given by the President of the Society, and one by a Fellow of the Institute. A meeting was arranged for the reading of a paper by Mr. S. Ishii, but owing to his illness at the last moment the meeting had to be abandoned.

PUBLICATIONS.

During the year two half-yearly parts of the *Journal* have been issued, viz., Vol. xlvii, Part 2, and Vol. xlviii, Part 1.¹ Of the former 94 copies, and of the latter 69 copies have been sold. The corresponding figures for 1917 are 100 and 79 respectively, showing a net decrease for 1918 of 16 half-yearly parts. The usual twelve monthly parts of *Man* have been issued. There has been a slight decrease in the amount received from subscriptions, and a rather larger decrease in the amount received from Office Sales.

LIBRARY.

The accessions to the Library number 203, of which 54 are bound volumes. The exchange list has been increased by three publications. The number of books bought has been very small, but necessary binding work has been continued.

EXTERNAL.

Professors Keith and Seligman have again acted as the Council's representatives on the Board of Scientific Societies. Professor Seligman was compelled to resign from the Board owing to his leaving London for an indefinite period, and Dr Rivers was appointed by the Council to take his place. A subscription of £10 was paid to the funds of the Board for the year 1918.

In December, the Council appointed Sir Everard im Thurn and Professor Keith as its representatives on an Archæological Joint Committee formed in association with the British Academy, having for its object the furthering of the study of antiquities and races in the East, by aiding in the utilisation of the new opportunities now presenting themselves. It is understood that the Committee will be recognised by the Foreign Office as an Advisory Committee which is to be consulted, and also to offer advice, upon all questions relating to antiquities and other matters in Egypt, Palestine, Syria, Mesopotamia and other parts of the Middle East. As a first step the Foreign Office is to be petitioned to take immediate action to protect and preserve antiquities, and to regulate investigations in the regions in question.

¹ The Council has to thank Mr. H. Ling Roth for providing the blocks for the several parts of his paper on "Primitive Looms."

HONOURS CONFERRED ON FELLOWS OF THE INSTITUTE.

The Council desires to offer its congratulations to Sir Everard im Thurn, who has been made a Knight of the Order of the British Empire, to Sir George Dancer Thane, who has received the Honour of Knighthood, to Dr. William Crooke, who has been made a Commander of the British Empire, and to Mr. R. T. Smallbones, who has been made a Member of the Order of the British Empire.

TREASURER'S REPORT FOR THE YEAR 1918.

The revenue for the year 1917 exceeded its expenditure (excluding from the latter the sum of £10 0s. 5*d.* transferred to capital account) by £73 19s. 11*d.* The expenditure for 1918 has exceeded its revenue by £62 8s. 1*d.* Financially, therefore, the results for 1918 have been worse than those for 1917 by £136 8s.

So far as subscriptions have been concerned, the results for 1918 have been better than those for 1917 by £24 12s. 3*d.*; this improvement is due, however, to the receipt in 1918 of a life subscription, without which the receipts from this source in 1918 would have been a few pounds below those for 1917. The amount of accumulated arrears has now increased to about £350.

The cause of the great difference between the total results of these two years is shown by the following comparative figures, in which shillings and pence have been omitted.

	Actual cost.	Proceeds.	Net cost.
	£	£	£
1917—			
<i>Journal</i>	279	151	128
<i>Man</i>	183	165	18
Printing and Stationery	27	—	27
			<hr/>
			173
			<hr/>
1918—			
<i>Journal</i>	345	145	200
<i>Man</i>	239	154	85
Printing and Stationery	65	—	65
			<hr/>
			350
			<hr/>

It will be seen that the net cost for 1918 under these three heads has exceeded that for 1917 by £177; and the main reason for this has been the extraordinarily rapid increase in 1918 in the cost of paper and printing. The contents of the half-yearly parts of the *Journal* and the monthly numbers of *Man* have to be decided upon in advance; and under normal conditions, and up to and including 1917.

Treasurer's Report for the year 1918.

ROYAL ANTHROPOLOGICAL INSTITUTE

ACCOUNTS FOR

REVENUE

PAYMENTS.		£	s.	d.	£	s.	d.
RENT					175	0	0
"JOURNAL"					345	1	7
"MAN"					239	9	4
SALARIES					200	18	9
HOUSEKEEPING					26	8	2
ADVERTISING					7	0	0
STAMPS AND PARCELS					54	14	10½
TELEPHONE AND TELEGRAMS.....					6	12	6
PRINTING AND STATIONERY					65	11	10½
COAL, GAS, AND ELECTRIC LIGHT					8	5	7
EPIDIASCOPE					8	5	6
INSURANCE—							
Fire		5	0	0			
Aircraft.....		12	10	3			
Employers' Liability		0	11	0			
						18	1 3
TRAVELLING					1	14	7
SUBSCRIPTIONS TO OTHER SOCIETIES, DIRECTORIES, ETC.....					4	2	0
AUDITORS' FEE.....					3	3	0
DONATION TO BOARD OF SCIENTIFIC SOCIETIES					10	0	0
TYPEWRITER, ETC.....					1	2	6
ASSOCIATION FOR PROTECTION OF TRADE					1	4	0
SUBSCRIPTION TO BRITISH ASSOCIATION					1	0	0
POST OFFICE (telegraphic address)					1	1	0
BANK CHARGES					0	19	0
SUNDRIES					7	18	6½
TRANSFER TO LIBRARY ACCOUNT.....					35	3	2
Balance, 31st December, 1918					256	3	6
					<u>£1,479</u>	<u>0</u>	<u>8½</u>

LIBRARY

	£	s.	d.
BOOKS AND BINDING	35	3	2

OF GREAT BRITAIN AND IRELAND.

THE YEAR 1918.

ACCOUNT.

	RECEIPTS.	£	s	d.	£	s	d.
BALANCE, 1st January, 1918					318	11	7½
SUBSCRIPTIONS :—							
Current		676	9	6			
Arrears		52	14	0			
Advance		22	12	0			
Life		31	10	0			
					783	5	6
SALE OF "JOURNAL"					145	5	10
SALE OF "MAN"					154	1	6
SALE OF "HUXLEY LECTURE"					1	2	11
ADVERTISING					0	17	6
DIVIDENDS					75	2	8
SALE OF WASTE PAPER					0	10	2
SUNDRIES					0	3	0

£1,479 0 8½

ACCOUNT.

	£	s	d.
TRANSFER FROM REVENUE ACCOUNT	35	3	2

Balances of previous Accounts :					
Revenue Account.....	256	3	6		
Capital Account.....	5,465	4	4		
	<u>5,721</u>			7	10

£5,724 9 6

Miscellaneous Publication Balances, stated at the amounts at which they stand in the accounts, but probably only of small value :					
Amount on 1st January, 1918	106	19	8		
Less received during the year.....	<u>1</u>	<u>12</u>	<u>9</u>		
				105	6 11
American Dollar Bonds referred to in Capital Account.					

Cash :					
In Bank.....	29	12	7		
In hand (petty cash)	<u>0</u>	<u>4</u>	<u>0</u>		
				29	16 7

£5,724 9 6

ROBERT W. WILLIAMSON,
Hon. Treasurer.

We have examined the Accounts of the Royal Anthropological Institute and have obtained all the information and explanations we have required. In our opinion the Balance Sheet at 31st December, 1918, is properly drawn up so as to exhibit a true and correct view of the state of the Institute's affairs according to the best of our information and as shown by the books of the Institute.

JACKSON, PIXLEY, BROWNING, HUSEY & Co.,
CHARTERED ACCOUNTANTS,
Auditors.

58, Coleman Street, E.C.
22nd January, 1919.

it has been possible in doing this to estimate fairly accurately the probable cost of printing, and adapt the sizes of the publications to the necessities of the situation. But in 1918 the increases in this cost have been so great and so rapid that estimates have been quite out of date a few weeks after they were made. I may say, as regards the item of printing and stationery, that a considerable portion of the increased cost incurred in connection with it is to be ascribed to authors' copies of articles written by them for the *Journal*.

It is obvious that the difficulty will have to be met by a substantial reduction in the sizes of these publications, at all events for the present; though it is hoped that before long prices will settle down again, not, it is feared, to pre-war figures, but to something much less than those prevailing in 1918.

I must also once again point out to certain Fellows that the difficulty has been enhanced immensely by the extent to which they have failed to pay their subscriptions; indeed, but for this, it could have been met to a large extent. It is hoped that now many Fellows, who have been prevented by war conditions from paying their subscriptions, will be able this year to clear off arrears and be regular in future; in this way they will make it possible for the Council to expedite a return to normal sizes of the publications. On payment of arrears, Fellows will receive their numbers of the *Journal*, which have been kept back, in accordance with the Institute's regulations.

I am glad to be able to present a more encouraging report as to the Institute's capital account, an interesting feature of which is a substantial increase in the value of its investments.

The Institute has also had the good fortune to receive an unexpected little windfall, of uncertain value, from the estate of the late Mr. Americanus Featherman. This gentleman was in the year 1906 the owner of \$6000 bonds of the Atlanta and Charlotte Air Line Railway Company, then due for repayment; but he had lost his bonds, and in order to obtain payment of their amount, he and Messrs. J. and W. Seligman & Co. of New York entered into a joint bond of indemnity to the railway company against other claims in respect of them, the amount of the bond being nominally \$12,000 (double the amount of the actual anticipated risk). To cover Messrs. Seligman & Co. in respect of the liability thus undertaken by them on his behalf, Mr. Featherman deposited with them certain bonds of the Chicago and Eastern Illinois Railway Co. and the St. Louis and San Francisco Railway Co., with a document of security, in which he designated the Institute as the owners of the bonds, subject to their lien, in the event of his death. He died in 1910, since which his affairs have been under the direction of the Court of Chancery, and the Court held, in the late autumn of 1917, that the document of 1906 was a valid assignment, subject to Messrs. Seligman's lien, to the Institute. The administrator of Mr. Featherman's estate has therefore paid the Institute the accumulated interest received from these bonds since his death, and the total amount thus received appears

in the Capital Account. Some changes have taken place since Mr. Featherman's death in the character of the bonds; they are now \$3000 4 per cent. bonds of the Chicago and Eastern Illinois Railway Co. and \$4000 4 per cent. bonds of the St. Louis and San Francisco Railway Co. The former of these companies is in the hands of receivers, and since January, 1914, no interest has been paid in respect of its bonds; the latter Company is still paying interest on its bonds.

I have thought it proper, in view of the very uncertain value of these securities, now very much below their face value, and the heavy contingent liability to which they are subject, to credit the amount received in respect of them to Capital Account.

The position as regards the future of the bonds is that, while on the one hand Messrs. Seligman's contingent liability to the Atlanta Railway Company, and the corresponding security held by them over the bonds, may never develop into an actual claim, such a claim might arise at any time, and it might amount to the whole or a considerable part of the value of the bonds. The Institute can only, therefore, regard these bonds as an asset of doubtful value, which might be lost entirely; and in the meantime, even if the bonds were realized, the Institute could not claim to receive the proceeds, which, or the reinvestments of which, would have to remain in the hands of Messrs. Seligman, unless some fresh arrangement could be made as to the whole matter. Messrs. Seligman would also be entitled, if they wished, to refuse at any time to remit to the Institute the interest on the bonds received by them.

ROBERT W. WILLIAMSON,

Hon. Treasurer.

PRESIDENTIAL ADDRESS.

ANTHROPOLOGY AND WAR.

By SIR HERCULES READ, LL.D., F.S.A., F.B.A.

Of all the many kinds of social catastrophe due to human action, none is more subversive and disturbing than war. When, as in our own time, the greater part of the civilized world is directly involved in the conflict, its effects touch every corner of our social economy at the time, and its final consequences reach far into an unknown future. These considerations, with our present painful experiences, can only be stated as truisms. The effect of war conditions, like death itself, has reached every human being living within the limits of the struggle, and a vast number who are technically outside those limits.

On a smaller scale history has long been familiar with involuntary revolutions in society—involuntary in so far as they arise, not from a desire for change, but from the absolute need for rearrangement of the pieces of the social puzzle after they have been disturbed and scattered by the destructive activities of war.

How great such disturbance is at the present time we all know well, and the revolution, the natural swing of the pendulum of reaction, is evident on all sides. If one considers for a moment, it is singular how so innocent a word as revolution has come to connote scenes and political conditions such as are at present the fashion in Russia and a great part of Germany. The word in itself rather indicates peaceful automatic progress, continuous rather than catastrophic expenditure of energy, and it is true that even now and in this country many sides of our social revolution belong, happily, to this category. Other sides, however, threaten to develop into something more like the catastrophic type, and here we may hope that the ordered authority of Government will tactfully resolve the storm-cloud into its constituents of useful energy. Such calm and equable solutions are more common in the English-speaking world than with either the more volatile or more morbid races, and thus may be due to the presence of a basis of common sense in the mind of the normal Englishman, according to the theory of a distinguished French friend of mine who was familiar with the English character. But common sense, while invaluable for daily conduct and in the guidance of affairs under known conditions, cannot supply the place of experience, whether that be personal or the outcome of

historical knowledge. It is in this field, the supplementing of the knowledge of the normal citizen, that institutions such as ours can in these disordered times render a useful service to the community. We can, and we assuredly should, teach him how so to comport himself that he may fall into his place as a profitable unit in the community, and further, what is even of greater moment, that he should know what his duty and responsibilities are with regard to the health and well-being of his descendants.

I well remember years ago, when I was President of Section H of the British Association, Sir Michael Foster saying, in relation to a grant that I was urging, "The worst of you anthropologists is that you include everything," and in a limited sense he was right. Geology, economics, statistics, child-welfare, and many another apparently remote branch of scientific enquiry, in reality has its pigeon-hole in the all-embracing study of anthropology. While, on the one hand, so comprehensive a science may seem hopeless, yet on the other the very richness of the field gives anyone of us an ample choice when work is wanted. The student can wander at will from the shape or geological horizon of a flint implement to the causes of the decadence of the wisdom teeth, and yet keep well within the bounds of this all-embracing branch of science.

This sentence brings me from the statement of generalities down to specific matters. My distinguished predecessor, Professor Keith, recently dealt with the causes leading to changes in the shape of the English jaw, and demonstrated that this variation was due in great measure to change of diet from natural food to something artificially prepared so as to save the trouble of thorough mastication, and thus causing an atrophy or degeneration of the unused muscles and supporting bones. It is hard to exaggerate the national importance for the race of such an investigation. Unless such deterioration is checked, it must be progressive, and its progress means only one thing, a steady decline in the physical qualities of the people. A paternal government, once the contention was proved, would promptly step in and forbid the sale of artificially prepared foods to healthy citizens. This, however, is hardly our modern method, and if science cannot command a despotic or paternal government (essentially the same, of course) in order to attain its ends, it must take the more tedious and circuitous road of propaganda with Government approval.

I mention this one instance of the incidence of anthropological methods in our daily life as an introduction to the many avenues for energy on our part on similar lines, avenues in most cases opened or broadened by the war.

We have now a splendid chance of forwarding our study on one highly important side, viz., that of anthropometry. The public interest in such things is not unnaturally somewhat languid—statistics are dull reading, and, for the ordinary person, anthropometry is little else. But it is easy to believe that when the similar statistics of the whole of our citizen army are tabulated and intelligently set out, they might well form an entertaining story. I do not know how far these measurements have

been universal in the army, but I do know that a great deal has been recorded. One of the most interesting instances is that of the notes on the physical development in youths of eighteen or thereabouts during their training in camp. One or two of the commanding officers told me that the improvement in such youths in all directions, but mainly physical, was incredible, but it must be borne in mind that the actual training was helped by ideal open air conditions, and ample and excellent food. In any case, the war has caused these records in anthropometry to be produced, and it will rest with this Institute and with others like minded to see that, when the conditions of life are more normal, their existence and their significance are not forgotten. A very large public in these islands has a justifiable terror of militarism as a chronic condition; but I think they are apt to confuse military training with such national conditions as were common in Germany of recent years. That the latter are bad economically, and in the international sense, is not hard to demonstrate; but it is even more easy to prove the signal advantage of a few months of military training on youths in their teens, quite apart from the question as to whether it is not an advantage to be taught the use of arms. If a man can be taught how to defend his home and his country while he is being rendered more fit for any walk in life, it is surely a gain and no loss.

I am very sure that the anthropometrical statistics of our army during the war will provide ample demonstration of the truth of these statements, and for my part I sincerely hope that physical training, preferably on the military method, will always find a place in the life curriculum of the British youth. A huge standing army is one thing, and a bad thing beyond question, but a nation in which every able-bodied person has had the benefit of training how most effectively to defend himself and his belongings from unjust aggression is a proposition of an entirely different character. In my judgment such training would make the individual a better and more useful man, and to the same degree a better citizen.

Thoughts of this kind inevitably lead to a consideration of how far such societies as this, whose energies are in the main devoted to problems of a strictly scientific kind, are called upon to attack and improve the unwholesome conditions under which so large a proportion of the people of this country are compelled to live.

Organizations and agencies without number are apparently engaged in the task, and the Government itself is not behindhand. Should this institute take a hand in so absorbing and so beneficent a game? Are not we better equipped for getting at the root of the difficulties than a department of the Government? Let us consider for one moment the ultimate object of our anthropometrical statistics. Such enquiries are surely not made for the sole purpose of filling a report on the physical state of the British nation, any more than they are produced as an amusement for some of our more statistically inclined members. Their final purpose must be to demonstrate in what respects and to what degree particular defects exist among the population, in order, of course, that means may be found by which these defects

may ultimately be removed, and the subjects rendered physically perfect. That, I take it, will not be disputed, and having got so far, what an immense field is opened up for the legitimate labours of anthropology. These conditions are not, of course, the result of the war, but the war has undoubtedly intensified them, and what is more to the purpose at this moment, it has brought them vividly before the public eye ; so much so, that even the Government, usually a myopic organization, has perceived that they exist.

One great Government scheme, the housing of the people, if properly carried out, would probably reach farther towards the physical betterment of the nation than any one thing that can be mentioned. It has occupied a great deal of attention of late, and columns in the newspapers are filled with it, and I see to-day a notice of a meeting on the subject yesterday, and an important letter in another paper. Three qualities are wanted in an ideal residence, in this order : (1) health ; (2) convenience, and (3) beauty. In almost all the places I have seen, these three qualities are put in the opposite order, not perhaps in so many words, but by implication. The final result, moreover, is that the cost is to be so high as to make it impossible for anyone but a generous Government to build a workman's cottage. Can a more ridiculous result be imagined ? And yet men in other respects sensible are found to argue that a solution so entirely opposed to economic conditions is yet a reasonable one, and that a scheme so fundamentally wrong can be satisfactory and lasting.

I have put the healthiness of a house as the first requirement, and there I am sure everyone will be with me. The question, however, arises as to how this is to be attained or ensured. Beliefs and fashions change as to the best means of retaining health within doors ; and I am by no means sure that even now we are possessed of complete wisdom on the matter. I certainly do not know any one person who would claim to have studied all the aspects of the ideal dwelling from this standpoint, a man, that is, who could sit down and draw up in twenty-four hours a specification of what is required for a healthy house. The Office of Works, an admirable institution, whose functions gravitate between the building of a new embassy at Peking and the mowing of the lawns at the British Museum, does not, I believe, possess an officer charged with such a function. I know of no other existing department of the Government that would undertake the task, unless it be the promised Ministry of Health ; and then with the collaboration of the architects of the Office of Works.

On these lines much useful work would be done, if once it is made clear to the Ministry of Health that its medical officers would be expected to handle the problem of a healthy house. It is a matter demanding wide knowledge of divers branches of science, and the capacity of seeing how best science can be applied to the needs of everyday life. The ordinary medical officer would be nearly useless in such a post, and the ordinary architect no better.

That such knowledge is requisite, and that it should be used in the carrying out of a great Government scheme of housing, will hardly be disputed. It will, at any rate, be attempted, I trust.

The mere mention of such questions demonstrates one of my original propositions, the immensely wide field that is open to anthropology in a country like ours—so full of tradition and hampered by a conservatism that dislikes novelties just because they are not old. Moreover, I see every reason why we should gradually adapt our energies to the new demands. Our work has its eye on one side on the past, and I understand the fascination of that aspect as well as anyone. But there are good practical grounds for throwing ourselves into the problems of to-day. We might ourselves change in the process, but it is wisdom, I am sure, to keep the other eye focussed on the living world of our own people, and try to help in the difficulties of our country.

Hitherto, I have only regarded such enterprise as being undertaken in the way that has become habitual to us, that is, by the usual methods of scientific propaganda. This consists mainly in preaching to those already converted, in the publication of the results in our *Journal* or elsewhere, and in a certain amount of personal work among people of intelligence and, it may be, of somewhat longer vision than their contemporaries. The present time is, however, not the moment for self-effacing modesty, and the hiding of our light under a bushel. Schemes designed for national welfare are being put forward from every side, and almost by every class. Some of these are impossibly Utopian, persistently neglectful of the human side of the problems involved, and fully as forgetful of economic possibilities. It is quite conceivable that, with our present Parliament, composed in the main of unknown and inexperienced legislators, some of these incredible schemes may actually reach the House of Commons, and even attain to the dignity of debate. If that should happen, to what side can the nation look for wise guidance? Only to an occasional sane article in the pages of a magazine. Assuredly not to the newspapers: they were poor prophets when each possessed its own individuality; at the present time, when all are controlled by half a dozen trusts, one can only expect a series of choral effects, on one side or the other, but whichever side the various choruses may take, each and all are suspect and vitiated by the political aspect of the question, entirely regardless of the real demand. Here, therefore, is a function that this Institute or its members can usefully and efficiently perform.

Nothing has been more conspicuous in the popular legislation of the past twenty or thirty years than the entire disregard of its incidence on the nation as a whole. The principal measures have almost invariably affected certain classes without regard to others. Whatever the underlying motives may have been, and that in itself is an unprofitable enquiry, the effect has been steadily to undermine and destroy the self-reliance and sturdy independent character of the British citizen. He is told by one Act of Parliament after another that he may work or remain idle, that he may be a slave to drink or a total abstainer, he may marry and have half a dozen children or remain a bachelor, but whatever he may do within certain very wide limits, the State will look after him and his concerns and see that he ends his

days in ease and comfort. In making these accusations, I aim them as much at one political party as another: each has been as great a sinner as the rest. In a restricted sense there is good reason and propriety in such legislation; for beyond question the State is concerned with the fate and welfare of every citizen, be he good or bad. But it is even more unquestionable that the business of the State is so to legislate as to put a premium upon good citizenship, and passively, if not actively, to penalize those who fall short of the average standard by their own misdeeds. This, again, may be thought remote from anthropology, but I think not. Human nature, even robust human nature, is naturally tempted by the line of least resistance, and while a self-reliant individual would probably reject indignantly a dole from another person, he would be much more likely to accept charity from an intangible and invisible entity like the State. But unquestionably the sturdy citizen is by far the least likely to be in a position to require such aids, and if, as I think, it be our function to define the conditions needful for the physical betterment of the nation, then equally it is our province to see that no legislation is passed that tends to lower the standard. To put the problem into other words, it is a more praiseworthy endeavour to try and prevent degeneracy in the race, whether by legislation or by social or scientific pressure, than by default to permit of a steady decline, and then to set about an examination of the results. It is not likely, nor is it perhaps politic, that an institute such as this should attempt to engage single-handed in so far-reaching a scheme. We are too remote from the public eye, and our machinery is by no means suited for such an undertaking. Many other societies are both nominally and actually more intimately connected with such questions, and would more readily command public support. If, therefore, anything can be done in this direction, it would be in collaboration with other bodies of like intentions, but with titles of a mere self-explanatory sort.

Questions of this kind, though not one of the direct results of war, have yet been brought to the front as definite problems by the conditions that war has imposed upon the community. In another category comes a question which, on the other hand, is one of the direct and normal results of war. This is the effect on the race of the withdrawal during war of the young and most physically sound males from the community. In our own case what has happened is that for a period of more than four years the fittest men of the population have been gradually absorbed into the army, and removed not only from their own productive avocations but, except in a limited number of cases, from marriage. One direct consequence is that hundreds of thousands of these picked specimens of manhood never return and are entirely lost to their country; a second is that the birth-rate falls more or less in a direct ratio to the number of absent men, while a third is, that probably more marriages than the normal are contracted between the home-staying residue of relatively unfit subjects. This most important question has, of course, been often dealt with before, but it is only now that it is for us more than an academic one. Galton, Beddoe, and others have written on the subject, and I think it worth while to quote the words

of Professor Ripley¹ in his admirable work, which incidentally deals with the stature of European races. In speaking of war, he says :—

“At such periods the normal men are not only isolated for an indefinite period, their ranks are permanently decimated by the mortality at the front. The selective influence is doubly operative. Fortunately, we possess data which appear to afford illustration of its effects. Detailed investigation in various parts of France is bringing to light certain curious after-effects of the late Franco-Prussian war. We do not always fully realize what such an event means for a nation, quite irrespective of the actual mortality and of the direct economic expenditure. Every family in the land is affected by it, and the future bears its full share with the contemporaneous population. In France, for example, during the year of the war, there were 75,000 fewer marriages than usual. In 1871, upon its conclusion, an unprecedented epidemic of them broke out, not equalled in absolute numbers since the veterans returned from the front in 1813, on the cessation of hostilities at that time.

“Two tendencies have been noted from a comparison of the generations of offspring severally conceived before, during, and after the war. This appeared in the conscripts who came before the recruiting commissions in 1890–92, at which time the children conceived in war times became, at the age of twenty, liable for service. In the population during the progress of the war, the flower of French manhood, then in the field, was without proportionate representation. There must have been an undue preponderance, not only of stunted men rejected from the army for deficiency of stature alone, but of those otherwise physically unfitted for service. Hence the population born at this time ought, if heredity means anything, to retain some traces of its relatively degenerate derivation. This is indeed the case. In Dordogne, this contingent included nearly 7 per cent. more deficient statures than the normal average. Quite independently, in the distant department of Hérault, Lapouge discovered the same thing. He found in some cantons a decrease of nearly an inch in the average stature of this unfortunate generation, while exemptions for deficiency of stature suddenly rose from 6 to 16 per cent. This selection is not, however, entirely maleficent. A fortunate compensation is afforded in another direction. For the generation conceived of the men returned to their families at the close of the war has shown a distinctly upward tendency almost as well marked. Those who survived the perils and privations of service were presumably in many cases the most active and rugged, the weaker portion having succumbed meanwhile, either to wounds or sickness. The result was that the generation conceived directly after the war was as much above the average, especially evinced in general physique perhaps more than in stature, as their predecessors born of war times were below the normal.”

Professor Ripley's figures deal with a year-long war, as against the late conflict of more than four years, and the results in our case are vastly more serious and far-reaching, though, on the other hand, it is probable that examination will show that

¹ *The Races of Europe*, 1900, p. 87.

the two, apart from their duration, are not strictly comparable. A short war is conducted under conditions of emergency and stress that are apt to be changed, and even eliminated, when the war takes a more permanent form, particularly if the battlefield is not remote. This was in effect the case with regard to a very large proportion of the British army in France and Flanders—when it was a common thing for men from these fronts to be allowed to return home for short periods. It is common knowledge, moreover, that a large number of marriages were a result, and it may be that some record has been kept of their number. But even when these small compensations are taken into consideration and given their full value, it will be of great interest for investigators to keep an observant eye upon the physical condition of the population born during the last four years when they have attained to adult age.

Again, there is another side to this picture of war. The more general employment of women in physical tasks, with the resulting developments in themselves, and the equally important disturbance of economic conditions, will without doubt effect changes in daily life that anthropology would do well to consider. That women will benefit individually from the wider field now opened to them is hardly open to question. But it is certainly a more doubtful matter whether in all respects the nation will be the better. For one thing, it is far less likely that a young woman will be so ready to sacrifice her independence for marriage if she is entirely capable of maintaining herself in comfort without marriage. Whether the marriages be fewer or deferred until, say, the age of thirty, the effect will undoubtedly be a diminished birth-rate, a result that we can hardly regard with equanimity.

The more equal distribution of the wealth of the country, another of the indirect consequences of the war, is again a matter that will create a vast change in many respects—a beneficent revolution, let us hope. Shorter hours of labour and more generous payment should go far to produce a race fully as useful physically and greatly better on the intellectual side. But here again it appears to me that the State should lend a helping hand in directing the released energies of the working population. As a people we are accused of taking our pleasures sadly, but there is no reason why we should not take them sanely, and I can see great opportunities in the way of teaching the public that pleasure can be taken in an intelligent manner. In this the most modest among us can take a part.

I ventured to deal with the foregoing matters to-day, because there can be only one view as to the importance of nearly all of them, and secondly, because I think this Institute might usefully, both to the community and to itself, come out into the open as it were, and take a hand in this serious game. Mr. Lloyd George is fertile in aphorisms, and one of his later ones might well have formed my text to-day: "You cannot make an A1 empire with C3 men." I think the Institute can do something towards producing an A1 empire, and in eliminating altogether such a class as C3, and thus we may attain to the very desirable ideal of leaving the country better than we found it.

ANTHROPOLOGICAL OBSERVATIONS ON GERMAN PRISONERS OF WAR.

By F. G. PARSONS, F.R.C.S., *Professor of Anatomy in the University of London.*

EARLY in 1918, through the help of Colonel Marett Tims, I received permission from the War Office to make observations on the wounded prisoners of war in the Belmont Hospital near Sutton, in Surrey, and in the war hospital at Dartford, in Kent. Every help was given me by the Commandants of these hospitals as well as by their medical staffs, and I am very grateful for the kindness and courtesy they showed me.

Later on I was allowed to measure a number of British wounded soldiers in St. Thomas's Hospital for comparison, and I have also a number of observations on my own students which I have gradually accumulated.

I decided to concentrate my attention on the cranial index, the facial index, the hair and eye colour, and the stature, but I soon found that with wounded prisoners, many of whom were in bed, the stature was very difficult to obtain. As, however, the stature of all the prisoners of war in England is recorded and preserved in the Information Bureau in Wellington Street, I have obtained my statistics from there, as well as a good deal of extra information about hair and eye coloration.

CEPHALIC INDEX.

In 925 Germans the glabello-maximal length averages 189 mm., and the breadth 155.

In 127 British soldiers they are 191 mm. and 149 respectively, and in 103 medical students of British parentage, 194 and 152.

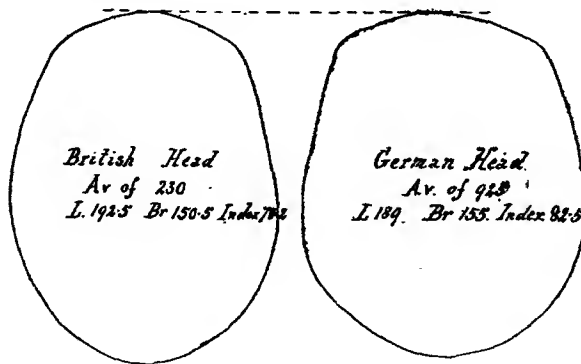


FIG. 1.

This means that the cephalic index of male Germans, as tested by these 925, is 82.5, while that of 230 Britons, partly soldiers, partly medical students, is 78.2. It is unnecessary to apologise for my small number of British observations, since any standard text-book teaches that the English or mixed British, living, average is more uniform in its constancy than that of other nations, and is always very close to 78.¹

Fig. 1 shows contours of two heads, one having the British, the other the German, length and breadth. It will be seen that the average British head is some 3 mm. longer than the German, and 5 mm. narrower.

Fig. 2 shows the cephalic indices of the 925 Germans arranged in a chart, and below are the curves of the British and German indices, reduced to percentages, in order to be on the same scale.

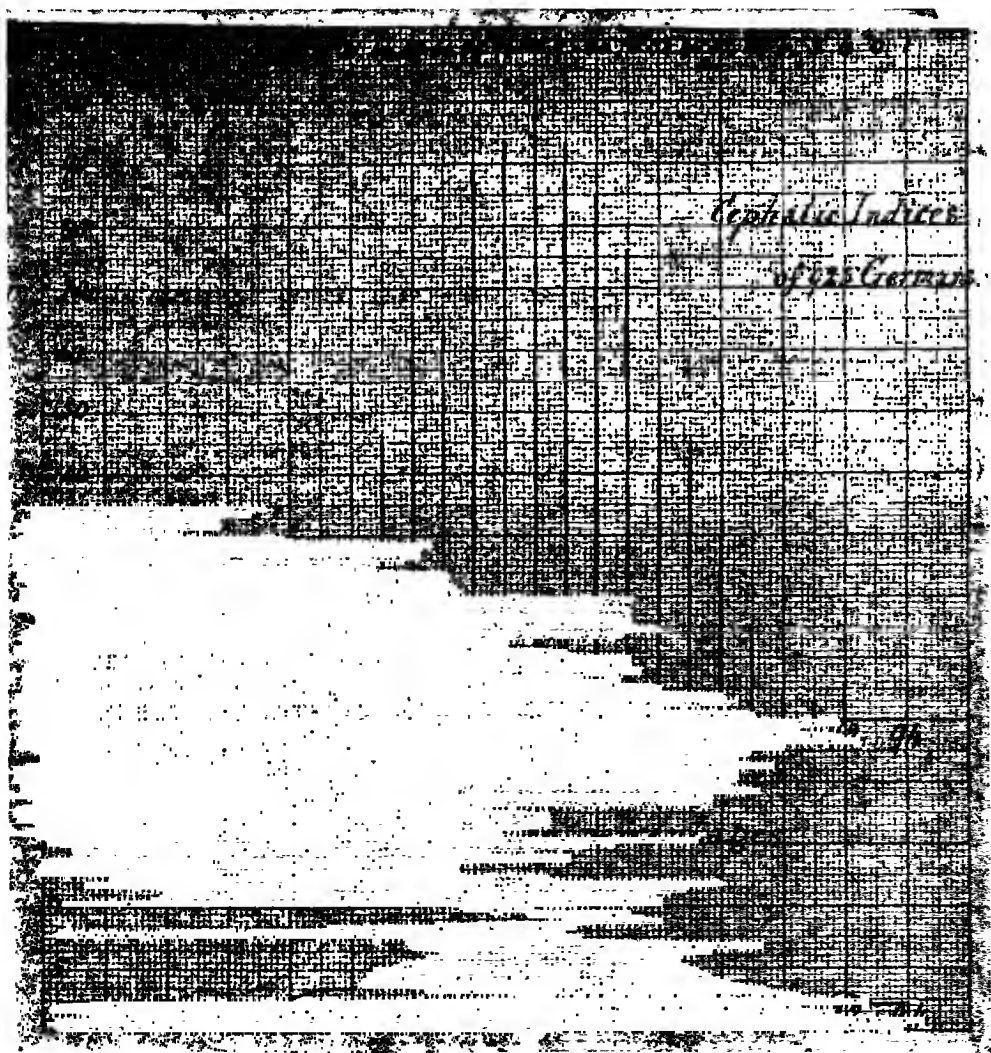


FIG. 2.

¹ Since writing the above I find that the average of 9144 British indices is 78.24.

The next thing was to see how far the short or Alpine type of skull had obscured the long or Nordic type; or whether in those parts of Germany from which the Anglo-Saxons originally came, we should still find an index as low as, or even lower than, that of the average Englishman of to-day. It will be noticed that I am using the terms English and British almost indiscriminately and, as far as head shape is concerned, I believe I am justified, since they are very mixed, and there is every reason to believe that the British and Gaelic-speaking people were simply earlier waves of the Nordic or Teutonic stock; the great difference being that the former were prehistoric, the latter historic waves.

Since I communicated my results to the Institute, Dr. Le Gros Clark very kindly volunteered to check them on a series of German prisoners of war interned on Salisbury Plain.

I think that the best thing will be to place his results against my own without comment.

CEPHALIC INDICES COMPARED.

Province.	Parsons.		Le Gros Clark.		Average.
	Index.	Number of Observations.	Index.	Number of Observations.	
Alsace-Lorraine	834	(27)	827	(7)	833
Baden	824	(41)	834	(35)	829
Bavaria	845	(44)	840	(106)	841
Brandenburg	834	(71)	830	(65)	832
Brunswick	806	(14)	818	(7)	810
East Prussia	816	(52)	816	(23)	816
Hanover	813	(74)	814	(83)	814
Hessen	824	(38)	829	(37)	826
Mecklenburg	822	(30)	825	(10)	823
Oldenburg	802	(28)	821	(8)	806
Pomerania	826	(35)	818	(13)	824
Posen	821	(38)	829	(19)	824
Rhineland	812	(66)	811	(74)	811
Saxony	834	(66)	840	(130)	838
Schleswig-Holstein	808	(44)	812	(40)	810
Silesia	844	(59)	847	(147)	846
Thuringia	829	(39)	833	(15)	830
Westphalia	808	(54)	799	(49)	804
West Prussia	824	(36)	821	(16)	823
Wurtemberg	838	(57)	839	(46)	838

The accompanying map (Fig. 3) shows how far my expectations were realised. It is quite obvious that the north of Germany is more long-headed than the south and east, and that Silesia and Bavaria are particularly brachycephalic, but it is curious that in the extreme east, in Posen and East Prussia, there is a tendency to long-headedness again. The most striking lesson, however, was that nowhere in the

Germany of to-day could I find material with a cephalic index below 80, while in the British Isles it is rarely that we get an average of as much as 80.

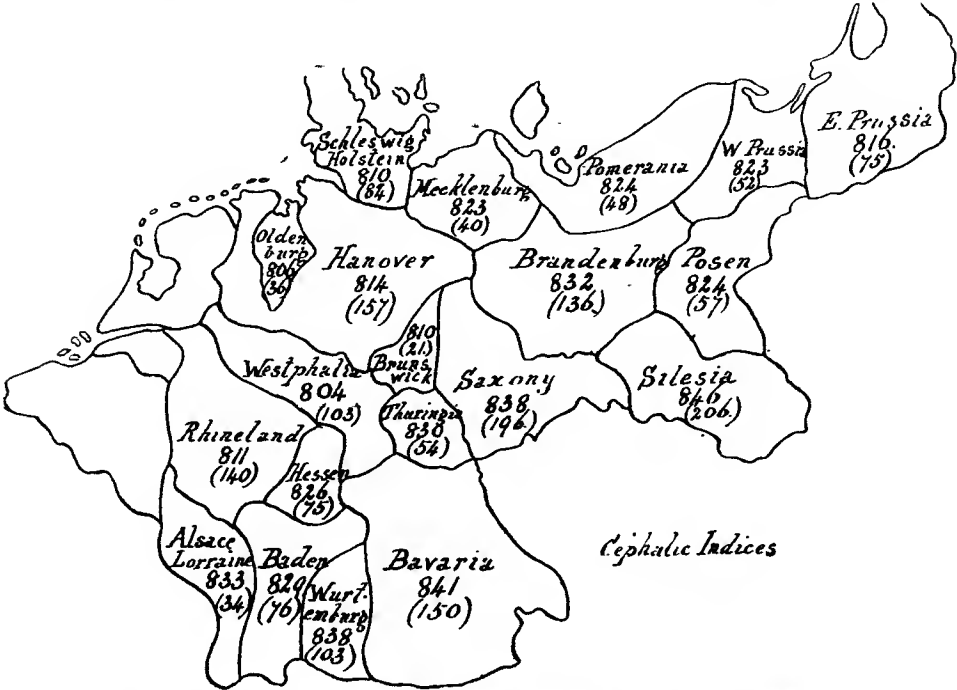


FIG. 3.—CEPHALIC INDICES IN THE VARIOUS PROVINCES OF GERMANY.

I admit that I have counted the men of Bremen with the Oldenburghers, and the Hamburg men with the Hanoverians, but I do not think this has made much difference in the return of the cephalic index, though I dare say it has in that of the stature.

The shaded maps of Germany (Fig. 4) show a deeper tint as the shortheadedness

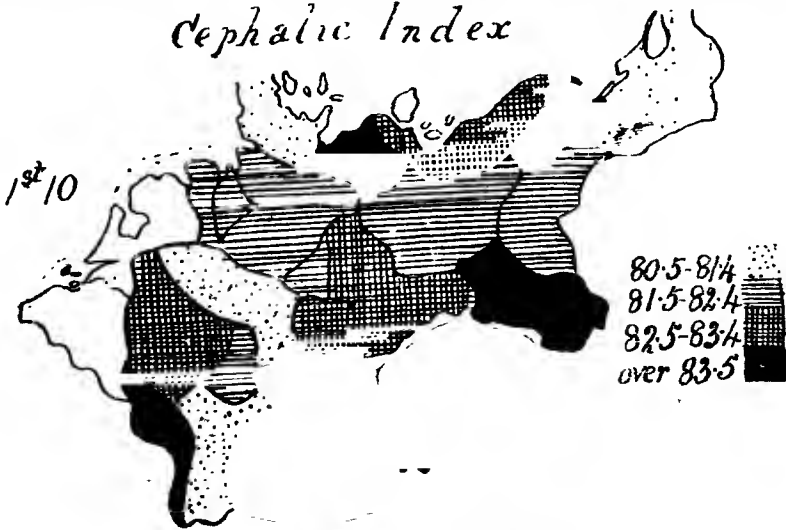


FIG. 4.—THREE MAPS (see also p. 24).

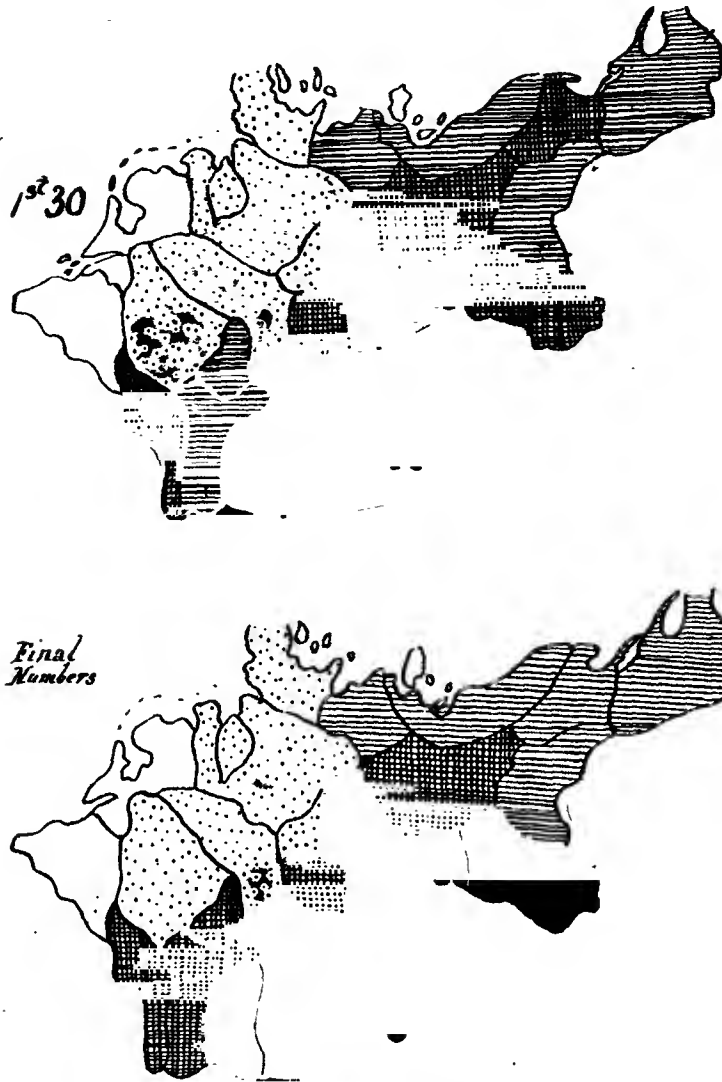


FIG. 4.—THREE MAPS (*see also* p. 23).

increases, and they are intended as a rough test of the number of observations necessary before generalising. It will be seen that the first map, founded on ten observations in each province, gives a rough, but very rough, idea of the distribution of head shape; but the second one, founded on thirty measurements in each province, only differs slightly from the third or completed map, where the observations in some cases number two hundred in a province.

From this, as well as former experience, I do not think that cephalic indices should be averaged from less than thirty measurements, and that even then the result is only reliable to two figures.

If it is established that the present-day Germans who inhabit Hanover, Oldenburg and Schleswig-Holstein have an index of over 80, they must be a different

people from those who invaded and settled in England in the fifth century, for the Anglo-Saxons were remarkable for their long-headedness.

I have measured twenty male Anglo-Saxon skulls in the Royal College of Surgeons Museum, while Dr. Gildemeister has recorded the measurements of sixty-three male skulls found in the row-graves near Bremen. He regards these as dating from the ninth to the fourteenth centuries, but I entirely concur with Mr. Harold Peake in dating them several centuries earlier. It must be borne in mind that our own Anglo-Saxon skeletons are usually, if not always, found in row-graves, and never bear any Christian symbols.

There is every probability that the skulls available in London and those at Bremen are of people whose habits and customs were alike, and who lived about the same time; it will therefore be of special interest to compare them with one another and with the heads of the present-day inhabitants of Oldenburg and Bremen.

In order to compare skulls with living heads it is necessary to make some allowance for soft parts. Eleven mm. is usually allowed, but I have been going into the matter rather carefully lately, and am convinced that 7 or 8 mm. is an ample allowance.

	Length.	Breadth.	Cephalic Index.
63 ♂ Bremen row-graves	$190.8 + 8 = 199$	$143 + 8 = 151$	759
22 ♂ Anglo-Saxons	$191 + 8 = 199$	$143 + 8 = 151$	759
28 ♂ Modern Germans from Oldenburg and Bremen	192	156	802

This table shows that while the average modern Englishman has increased his cephalic index from about 76 to 78, the modern Oldenburger has increased it from 76 to 80. (See Fig. 5.)



FIG. 5.—COMPARISON BETWEEN HEAD SHAPES OF ANCIENT AND MODERN INHABITANTS OF OLDENBURG (for Grave Rows read Row-graves).

I do not suppose it would be possible anywhere to find a random sampling of modern Oldenburghers with an average cephalic index of 76, but I could point to two large series of skulls in seventeenth and eighteenth century London, Clare Market and Whitechapel, in which the average index, after allowance for soft parts, was 76.

The question before us is whether the modern German has changed the shape of his skull, owing to change of habits and surroundings; the idea seems to me ridiculous, but must be argued seriously, or whether a new round-headed race, the Alpine or Slav race, has gradually supplanted the original long-headed, Nordic, inhabitants of north-western Germany.

As far as surroundings go the modern Oldenburgher has practically the same as his long-headed ancestor knew: the country is not less or more mountainous than it was, and there is no evidence that any marked climatic change has occurred, while if the change in the head shape is to be ascribed to change of food or habits it will be necessary to produce some evidence that the western Germans have been influenced by some effects of civilization which have not spread to the neighbouring long-headed regions such as Norway, Sweden, Holland and England.

The more one thinks of it the more one is convinced that since the sixth century the broad-headed Alpine race has been slowly and steadily supplanting the long-headed Nordic type, not only in Prussia but in every part of Germany, and the prisoners at our disposal give us no reason for thinking that there is any part of modern Germany in which the Alpine or Slav characteristics have not dominated the Teutonic or Nordic.

FACIAL INDEX.

A study of the German face shape will act as a check to that of the head. It is only necessary to look at the German comic papers during the war to realise that the German caricaturists recognise and accentuate the difference between the long narrow type of English face and the short broad face of the German; and when measurements are taken the difference is very evident indeed.

The index is obtained by dividing the nasio-mental length by the greatest bizygomatic breadth and therefore, of course, the higher the quotient the longer and narrower the face. Seven hundred and ninety-seven German soldiers gave an average face index of 842 against an index of 896 of 124 British (mostly English) soldiers.

Captain Le Gros Clark has checked my results in another series of German prisoners on Salisbury Plain, so that our combined results enable me to give the distribution of the facial index throughout Germany in 1737 individuals.

	Parsons' Observations.				Le Gros Clark's Observations.		Average.	
	Number.	Breadth.	Length.	Index.	Number.	Index.	Total Number.	Index.
Alsace ...	22	139	118	846	7	839	29	844
Baden ...	35	139	117	842	35	837	70	840
Bavaria ...	38	141	118	837	106	840	144	839
Brandenburg ...	69	140	118	843	65	844	134	843
Brunswick ...	12	140	116	829	7	838	19	832
East Prussia ...	36	140	120	857	23	853	59	855
Hanover ...	69	140	117	836	83	846	152	841
Hessen ...	33	138	118	855	37	834	70	844
Mecklenburg ...	23	138	117	841	10	845	33	842
Oldenburg ...	19	141	118	837	8	837	27	837
Pomerania ...	32	141	119	844	13	855	45	847
Posen ...	28	141	119	844	19	841	47	843
Rhineland ...	62	141	117	830	74	845	136	838
Saxony ...	63	140	117	836	130	828	193	831
Schleswig-Holstein	42	140	119	850	41	853	82	851
Silesia ...	43	140	116	829	147	831	190	831
Thuringia ...	34	137	115	839	15	834	49	837
Westphalia ...	72	141	118	837	49	830	127	834
West Prussia ...	27	141	119	844	16	838	43	842
Wurtemberg ...	38	139	119	856	46	843	84	849
British Soldiers ...	124	135	121	896	—	—	—	—

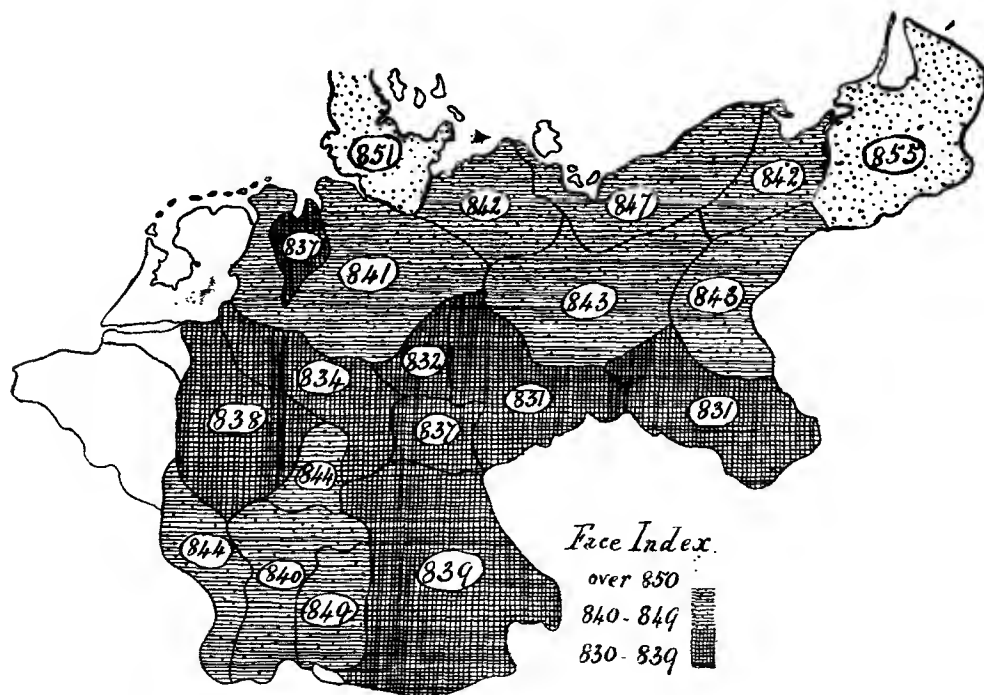


FIG. 6.

Fig. 6 shows the distribution of the face index on the map, and while it is evident that it is much more erratic and inconstant than the cephalic index, it is obvious that the whole of Germany is inhabited by people who differ very markedly from the British in their face shape.

It will be noticed that there is a wider gap between the Province (E. Prussia) which shows the highest index and the British, than there is between the lowest and highest of the German provinces.

This evidence of the face supports my contention that the original inhabitants of north-western Germany have been supplanted by men of another race, with short, broad faces, as well as round heads. Our own Anglo-Saxon skulls, with due allowance for the soft parts, show an average face index of well over 900, and it is possible that, as the skulls in the Bremen row-graves had the same cranial characteristics, they resembled them in the face also.

THE HEAD HEIGHT.

The auricular heights of 291 German soldiers gave an average of 133, against an average of 132 in 127 British soldiers, and also in 103 British Medical Students, mostly of English parentage.¹ This gives a height index of 704 for the German head against 687 for the British. The 291 measurements, when divided among the twenty provinces of Germany, are not enough to enable us to determine how the height is distributed.

CRANIAL CAPACITY.

The possession of the length, breadth, and height averages enables us, by Pearson and Lee's formula, to estimate the average cranial capacity of the heads as follows :—

	Length.	Breadth.	Height.	Capacity.
German soldiers (291)	189	155	133	1460
British soldiers (127)	191	149	132	1419
British students (103)	194	152	132	1458

HAIR AND EYE COLOUR (NIGRESCENCE).

The estimation of hair and eye colour is one of great difficulty, not only because of the personal equation of the observer, but because the relative coloration depends on both hair and eyes on the brightness of the illumination, and in the hair on whether it has been washed lately, or oiled or wetted. Then, again, the hair of the head may

¹ It is important to notice that this auricular height, as measured by Gray's head-spanner, gives the height from the *middle* of the external auditory meatus, *i.e.*, about 6 mm. more than the height from the top of the aperture.

be of a very different shade from that of the face, and it is clearly wrong to give the same degree of nigrescence to a series of, say, Englishmen with black head hair and brown facial hair, as to a series of Spaniards with blue black hair on both head and face.

At first I thought of having a card with a series of tints bearing higher numbers as they got darker, but, after trying it for a time, I realised that my results could only be compared with those of other people if they used the same card, and I became more and more impressed with the opinion that if one could approximately settle where the line between dark and light hair and eyes should be drawn, all that one could reasonably hope to do would be done.

If I am asked why I am not satisfied with Beddoe's method of obtaining an index of nigrescence, I should reply that I feel that something simpler and more easily understood is needed, and I particularly object to his habit of giving black hair twice the value of dark brown, unless it is the real blue black hair of the south European, accompanied by equally black hair on the face. By all means let us tabulate hair as fair, red, medium brown, really dark brown, and black, and follow Beddoe in regarding red hair as light hair and medium brown as light also.

We shall then definitely draw the line between light and dark hair just above the really dark brown.

Of course the line will still be arbitrary, for the dark-haired man of to-day might to-morrow, in a brighter light or after washing his head, be classified as fair, but nothing can prevent that, and it is better to have only one debatable line than two, as we should if we recognise an intermediate class between fair and dark.

Before suggesting a line of division between light and dark eyes, I want to call attention to the very regular sequence of the appearance of different pigments in the iris. I hope later on to elaborate this in a separate paper, but at present it is only necessary to start with the pink eye of the albino, where there is no pigment at all in the iris, and the blood gives the colour.

Then take the blue eye of the English child at birth: here the black layer of pigment behind the iris gives the colour, but, on looking closely, it will be seen that there is a faint ring of white pigment surrounding the pupil.

Contrasting the eye of the child at birth with that of a blue-eyed adult, one is struck by the brighter, clearer blue of the latter, and the dull leaden blue of the child. This is due, at least in part, to the increase of the white pigment in the interstices of the iris and in front of the black retro-iridial layer. The white pigment arranges itself in various patterns, and may or may not reach as far as the outer margin of the iris.

When it is very plentiful it so obscures the subjacent black that instead of the eye looking blue it is steel-grey.

The next stage in pigmentation is that a deposit of yellow pigment appears round the pupil, sometimes superficial to, sometimes in place of, the white; it, too, as it creeps toward the periphery, obscures the subjacent blue and, according to its quantity

and admixture with white, gives the various tones of light hazel, dark grey, green, and sherry-coloured eyes.

Next in the sequence appears brown pigment, superficial to the yellow, and, when in small quantities, confined to a ring round the pupil. As it increases, it spreads toward the periphery, though it is seldom that one sees an English brown eye without a ring of blue round the outer margin of the iris. This pigment is of various tints of brown, sometimes much redder than at others, and is liable to many interesting pattern changes.

To the anthropologist, whose immediate need is the establishment of a workable index of nigrescence, the important thing is to settle where we shall draw the line between a light and a dark eye, and I decided that the presence of an appreciable amount of brown pigment, if it only amounted to a ring round the pupil, should constitute a dark eye, and its absence a light one.

It now becomes a simple matter to construct an index of nigrescence by arranging all the records in three divisions :—

1. Full blonds in which both hair and eyes are light.
2. Half blonds, in which there is fair hair and dark eyes, or dark hair and light eyes.
3. Full brunets, in which both hair and eyes are dark.

When this is done, the percentage of each is taken, and the index of nigrescence obtained by adding the percentage of the half blonds to double that of the full brunets, the argument being that the division which has only one dark element should count half the value of that in which both elements, hair and eyes, are dark.

I am not inclined to content myself with a statement of the percentage of pure blonds alone or pure brunets alone, as many anthropologists do, because I found that in some cases I could prove that, by taking the percentage of pure blonds alone, one province was fairer than another; but when I took the pure brunets alone, the same province was darker than the other. The explanation was that the first province had a large number of pure blonds and brunets, and very few half blonds, while the second province had plenty of half blonds and few pure types of either kind. The index I suggest does justice to all the coloration, however and wherever it may be distributed.

As I came to arrange my material and work out the nigrescence of the different provinces, I found that it was necessary to have many more observations in order to get a steady index, than were needed for a steady cephalic index. Accordingly, I went to the Bureau of German Prisoners of War, where the record of every prisoner is kept, and abstracted the hair and eye colours of another thousand individuals whose province was also known.

I quite admit that in doing this I am introducing the personal equation of many different observers who may have the most varied opinions as to the difference

between light and dark hair and eyes. I know that these differences do exist, because many of the prisoners have two records, one taken in France and the other in England, and it is not a very unusual thing to find one describing the eyes as brown and the other as blue.

On the whole, however, the double record shows that the different observers were not very far apart in their estimation of the differences between light and dark hair and eyes; and I shall probably be getting nearer the truth if I include their material than if I generalised on an obviously insufficient quantity of my own. In the accompanying table I have given the nigrescence for each province of Germany, with the number of observations on which it was based, and it will be seen that the average index of nigrescence for the whole of Germany, founded on 2420 observations, works out at 60.

	No. of Observations	Percentage of Pure Blonds	Percentage of Half Blonds	Percentage of Pure Brunets.	Index of Nigrescence.	Dr. Le Gros Clark's Results.		Average of Parsons and Le Gros Clarke.	
						No. of Observations	Index of Nigrescence.	Number.	Index of Nigrescence.
Alsace ...	53	40	23	37	97	7	114	60	99
Baden ...	125	40·5	38·5	21	80	35	77	160	79
Bavaria ...	151	48	22	30	82	106	74	257	79
Brandenburg ...	184	60	20	20	60	65	74	249	64
Brunswick ...	40	50	25	25	75	7	100	47	79
East Prussia ...	101	62	26	12	50	23	52	124	50
Hanover ...	183	70	20	10	40	83	35	266	38
Hessen ...	104	52	29	19	69	37	57	141	66
Mecklenburg ...	51	65	26	10	46	10	10	61	40
Oldenburg ...	56	61	25	14	53	8	63	64	54
Pomerania ...	121	64	22	14	50	13	23	134	47
Posen ...	145	61	27	12	51	19	78	164	54
Rhineland...	187	59	23	18	59	74	61	261	60
Saxony ...	199	61	25	14	53	130	65	329	58
Schleswig-Holstein	90	61	24·5	14·5	53	40	40	130	49
Silesia ...	162	55	27	18	63	147	86	309	74
Thuringia ...	55	53	27	20	67	15	87	70	71
Westphalia ...	156	74	14	12	38	49	43	205	39
West Prussia ...	103	51·5	30	18·5	67	16	50	119	65
Wurtemberg ...	154	49	26	25	76	46	91	200	79
	2420				Av.Index 60	930	Av.Index 61	3350	Av.Index 61

Here Captain Le Gros Clark furnishes a most valuable check, for he has taken the hair and eye colour of 930 German prisoners on Salisbury Plain, and got an average index of 61. I have arranged his records for the various provinces by the side of my own, and leave them as an indication of the degree of accuracy of our method.

In a third column I have given the average between his and my results, and, in order to make these results more graphic, have set them out as a chart (Fig. 7).

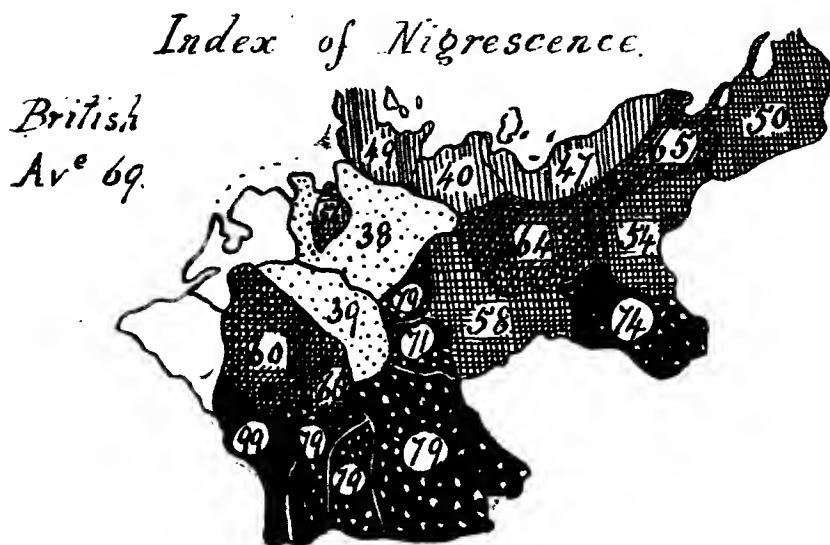


FIG. 7.

My own belief is that we have probably reached a broad general idea of the distribution of pigment among adults in Germany, and in many respects our results correspond with those obtained from the historic census of school children.

It is disappointing that we have altogether failed to substantiate the fairness of the people of Wurtemberg, perhaps because our numbers are insufficient, perhaps because it is unsatisfactory to compare fairness in children with fairness in adults. My own personal observations agreed with those of Dr. Le Gros Clark that the Wurtembergers were very dark indeed, but the records of the Prisoners of War Bureaux counterbalanced our results to a certain extent.

One point which struck me very strongly was the small number of red-haired people I found among Germans, and the matter seemed worth following up, since red hair is undoubtedly a common characteristic of Nordic people, among whom we may, I think, include the Scots and Welsh.

Gray, for example, tells us that 5 to 7 per cent. of red hair is normal in Aberdeen, and that 11 per cent. is sometimes reached in Scotland; while Arbo records 19 per cent. in Aamlid in Norway.

Among the 120 British soldiers examined in this hospital, 5 per cent. had red or reddish hair.

Beddoe¹ gives a number of observations from which the rubescence may be calculated, and I find that out of 1216 Northumbrians it averages 5.3 per cent., in 6823 Londoners 4.5 per cent., in 880 Kentish men 3.2 per cent., and in 1575

¹ *Races of Britain.*

Wiltshiremen 2·8. It will thus be seen that, according to Beddoe, the average English percentage of red hair is somewhere about 4 per cent., and that this percentage is founded on a considerable mass of material.

In 2354 German prisoners I found 1·9 per cent. of red hair, and I submit that, considering the numbers on which I am generalising, the difference in the percentage between Germany and England is more than a mere chance occurrence. To my mind it points in the same direction as the head shape, and indicates that the original Teutonic blood has been largely replaced throughout Germany by that of some other race in which red hair is less common.

This may be tested by seeing whether there is appreciably less redness in those parts of Germany in which the round heads are most marked. It will be useless to take each province singly, and work out its percentage of red-haired people, because the number of observations in each is often less than a hundred and only in the case of Saxony exceeds two hundred.

Anyone who has counted the frequency of red hair among the population in different parts of the country will bear me out when I say that it requires many hundred observations to get a steady percentage. I have, for instance, records of a hundred people met in London streets in which 7 per cent. were red-haired, and others in which not a single red-haired person was met. When I came to thousands, however, I found the average pretty steady, and a little below 4 per cent. That I am a trifle lower than Beddoe in my estimate may be due to the personal equation, or it may be that the thirty or forty years which divide our work have produced changes in the population; that, however, cannot be discussed here.

If we divide Germany by an arbitrary line, cutting off the northern and western provinces from the southern and eastern, we shall have two masses of observations, each of well over a thousand, the former corresponding to the longer headed, the latter to the rounder headed part of the country. The percentage of red hair in these two areas is set out below :—

	Number of Observa- tions.	People with Red Hair.		Number of Observa- tions.	People with Red Hair.
East Prussia	99	5	Posen	143	2
West Prussia	97	2	Brandenburg	172	1
Pomerania	112	4	Silesia	168	1
Mecklenburg	51	3	Saxony	204	5
Schleswig-Holstein	66	1	Thuringia	52	1
Hanover	183	6	Bavaria	150	3
Oldenburg	54	1	Wurtemberg	155	0
Westphalia	152	4	Baden	118	2
Brunswick	42	2	Alsace-Lorraine	53	1
Rhineland	188	3			
Hessen	107	3			
Total	1151	34 = 3 p.c.	Total	1215	16 = 1·3 p.c.

It will thus be seen that in the whole of Germany red hair is twice as uncommon as it is in England, and that in the south-eastern half of the country it is less than half as common as it is in the north-western half. It is important to say that, as far as my own personal observations go, I have looked out for and included the slightest tinge of red.

The last point to be considered is the stature of the modern German. Here I have no personal observations, because most of the people on whom I worked were in bed or on crutches. In the Bureau of Prisoners of War, however, there are records of the heights of prisoners, and in many cases a prisoner has two records, one in millimetres, taken in France, and the other in inches, taken in England.

The moderately frequent discrepancies in these records show that the measurements were rather perfunctory, but I have, as far as possible, only taken those in which the two records agreed fairly closely.

It must also be remembered that the average of soldiers is always likely to be above rather than below the average for the whole male population, though the difference is probably not so great at the end of a long war as in times of peace.

The following is the distribution of stature in the various provinces of Germany according to the 1545 records at my disposal :—

Province.	Number of Observations.	Average Stature.	Province.	Number of Observations.	Average Stature.
		Ft. ins.			Ft. ins.
1. Mecklenburg ...	20	5 8·1	11. Baden ...	70	5 6·4
2. Schleswig-Holstein	49	5 7·8	12. Pomerania ...	88	5 6·4
3. Thuringia ...	18	5 7·2	13. West Prussia ...	73	5 6·4
4. Alsace-Lorraine ...	27	5 7	14. Brunswick ...	27	5 6·3
5. Oldenburg ...	33	5 6·7	15. East Prussia ...	45	5 6·3
6. Hanover ...	109	5 6·6	16. Saxony ...	125	5 6·3
7. Brandenburg ...	110	5 6·6	17. Silesia ...	103	5 6·3
8. Rhineland ...	118	5 6·6	18. Posen ...	113	5 6·2
9. Westphalia ...	94	5 6·6	19. Bavaria ...	125	5 6·1
10. Hessen ...	75	5 6·5	20. Wurtemberg ...	125	5 6·1

. As I have said, I do not want to make too much of these measurements. I have no guarantee of their accuracy, and believe that in many cases they are mere estimates.

Still they are probably worth something, especially where a province is represented by fifty or more observations, because I have observed that an average obtained from fifty records is changed very little by the addition of another fifty.

At any rate, the story they tell is in harmony with that derived from the head shape, the face shape, and the coloration. The tall provinces are in the north and west of Germany, while the shorter men inhabit the south and east.

The average for Mecklenburg and Schleswig-Holstein must be something near the English average, which is officially said to be 5 feet 9 inches, but is probably 5 feet 8 inches or less, and no doubt in these regions there is a larger amount of the Nordic strain tempering the Slav blood, so predominant in the greater part of the country.

I merely note with surprise the stature of Pomerania with 5 feet 6·4 inches, because I had always heard that this was a country of very tall men. Of course, it is possible that the really tall men had been withdrawn to form special corps, such as the Guards and the Marine Artillery, and that these were not duly represented in the material at the Prisoners Bureau.

THE APPLICATION OF ANTHROPOLOGICAL METHODS TO TRIBAL DEVELOPMENT IN NEW GUINEA.

By E. W. P. CHINNERY, Lieut. Australian Flying Corps, formerly
Acting Resident Magistrate, Delta Division, Papua.

HIS EXCELLENCY the Lieutenant-Governor of British New Guinea, J. H. P. Murray, C.M.G., makes the following observations in the concluding chapter of his book, *Papua* (T. Fisher Unwin, London, 1912):—

Our first duties are to prevent the recurrence of epidemics, and to put down cannibalism and savagery in general, and, if we can succeed in this, and if the natives of the settled area can be educated into habits of sustained industry, the future of the Papuan is assured, and Australia will have the credit of having shown how the civilization of the twentieth century can be introduced among people in the Stone Age, not only without injury to them, but to their lasting benefit and their permanent advance upon the road of civilization.

Papua, or, as it was formerly called, British New Guinea, is divided into a number of administrative areas, each in charge of a Resident or Assistant Resident Magistrate with Patrol Officers and a force of Armed Native Constabulary. The members of the Armed Native Constabulary are natives of Papua who are trained in military duties in Port Moresby before being attached to divisional officers. The Resident Magistrate and his staff (whom I shall call "District Officers") are stationed as a rule in the most central portion of the division where they can be in close touch with their people. Population varies, but in some of the divisions there are more than 60,000 natives under control. The system of native administration is laid down by a number of Ordinances and Departmental circular letters and the District Officers perform their duties in accordance with these.

The general policy adopted throughout the British Empire in the Government of savage and barbarous races is defined by Dr. W. H. R. Rivers (*Science and the Nation*, 1917) as one

to uphold the indigenous culture of the subject race except where it conflicts with the moral and social ideals of the governing people.

and in reference to this, Dr. Rivers states :—

Whatever is the degree of interference with indigenous customs involved in this policy, knowledge of the culture to be modified is absolutely necessary if changes are to be made without serious injury to the moral and material culture of the people.

The responsibilities of Officers entrusted with the Government of native races will become greater when the colonies taken from Germany are added to the Empire. I have been in Papua since 1909, and it has been my privilege to study the native in all stages of social development. During special exploration work I have been the first white man to enter many strange communities of wild men and women, while, as a District Officer in charge of more or less settled areas, I have been able to follow the evolution of primitive cultures. This experience gave me a knowledge of the psychology of numerous tribes, and the application of such knowledge to general methods of administration enabled me to assist my people through their many stages of transition.

The customs most antagonistic to civilized standards are homicide, head-hunting, and cannibalism. In the interests of Papua and its people such practices must be abolished. His Excellency the Lieutenant-Governor of Papua, on page 363 of his work, *Papua*, referring to the native who learns for the first time that he must never go on any more raids, never collect any more heads, and never fight again, because the Government will protect him, states :—

. . . he is likely to feel a void in his existence, for his chief occupations will be gone, and unless something is given to him which will fill the void he and his descendants will suffer. This is the case of the Papuans.

In order to appreciate effects which may be produced by a suppression of homicide and attendant customs, let us analyse the following practices :—

1. *Social Homicide*.—Among many of the tribes of the Owen Stanley Range, from Mt. Obree to Mt. Chapman, a boy must pass through a ceremony of initiation before attaining the privileges of adult membership. During initiation he is secluded from women, children, and uninitiated persons, and instructed in warfare, material culture and social conduct. The initiation proceeds by stages, and at each stage the progress of the candidate is tested. When the elders are convinced that the novice has absorbed the spirit of unselfishness to such an extent that his future behaviour will promote communal welfare, he is permitted to qualify for the final stage of initiation—a ceremony investing him with the homicidal insignia. In order to qualify he must kill a man of another tribe. The investiture with the homicidal decoration gives the boy the proudest moment of his life. Seated on a throne of crossed spears, he listens to the deeds of valour of the brave men of the tribe, and in the presence of the whole tribe receives the homicidal decoration with compliments and words of encouragement. Then he becomes an adult member, and for the first time is entitled to ask the hand of a woman in marriage.

In this case we see that the suppression of homicide not only prevents a male from becoming an adult member of his tribe but also disallows marriage.

2. *Religious Homicide (Head-hunting and Cannibalism).*—Almost everywhere in Papua there is evidence of a belief in a soul that leaves the body at death and becomes a ghost. Since these ghosts are believed to influence the conditions of living people they are propitiated. The tribes of the Turama, Paibuna, Omati, Kiko and Sirebi rivers in the Gulf of Papua, not yet under Government control, offer the head of an enemy on a shrine known as “*Agiba*” (*Man*, Vol. viii, No. 12—A. G. Haddon). The *Agiba* is carved to represent a human figure, and as the skulls of a community are offered on one or two shrines the propitiation appears to be a communal offering to ancestors who attained greatness through their influence in earlier communal life. In Kiribari village (Paiia Inlet) I noticed pigeon-hole attachments to the walls of each cubicle in the “married men’s houses” containing decorated skulls of enemies.

It is believed that a man captures the soul of another by killing him, and the ghost of the dead man, by the offering of the head, becomes a slave of the tutelary ghosts of the tribe of the captor, and works with them to protect such tribe against evil influences and perpetuate the source and supply of their food.

This appears to be the most important reason for head-hunting, and I have been told by some of the most noted head-hunters of the Gulf of Papua that their food supply would fail and evil would come to them if they neglected to propitiate their ghosts.

In addition to the belief in a soul which afterwards becomes a ghost there is a belief that the essence of the soul permeates the body and attaches itself to everything with which the body comes in contact. The soul essence remains in the body at death. Every man desires to increase his own soul strength, and so we have another inducement to homicide, for, by eating the body of an enemy, it is believed that a man adds to his own strength the quality of the portion eaten. So, in the belief that like produces like, the cannibal, when it is possible, eats that portion of the body of a victim which is weak in his own, that his deficiency may be reinforced.

As a general rule the person who kills the body does not partake of it. But the reason is not clear. As a similar practice is followed when a wild boar is killed I am inclined to believe that it illustrates but another form of individual unselfishness which is so evident in primitive life.

3. *Homicide generally.*—In many of the tribes in the Gulf of Papua communal houses must not be occupied and canoes must not be launched until human blood has been sprinkled on them. I am informed by the natives of Kerewa tribe (Aird Delta) that Messrs. Chalmers and Tompkins of the London Mission, who were murdered by them many years ago, were victims of this custom.

Other forms of homicide, and customs equally obnoxious to our civilized morals, are practised in New Guinea to fulfil the needs of tribal welfare, but I shall confine my paper to the above practices, since they fully illustrate the difficulty of civilizing the natives without injury to their welfare.

Having shown to what extent the welfare of some communities depends on the custom of homicide, I shall now offer suggestions to show how the practice may be abolished without injury to the people.

If homicide be an essential link binding together the social and religious fabric of a community, the suppression of homicide is likely to result in the collapse of the whole structure unless something equally capable of perpetuating tribal welfare is substituted to fill the void. What is required is a substitute that will enhance the stability of primitive institutions so that their development can proceed with the cultural development of the natives. The selection of effective substitutes involves an intensive study of the cultures of the Papuan and the modes of thought which produce actions antagonistic to Government standards. When the fundamental principles underlying these customs become revealed, officers entrusted with the administration of primitive races, by the application of such knowledge, may safely lead their people through the initial stages of transition and gradually divert their energies into channels of progress and advancement. Owing to the diversity of people and customs in Papua, each tribe must be studied independently, but since the elements of culture, as a rule, present no marked diversities, what is effective as a substitute for a custom to be suppressed in one district might be modified or elaborated to meet the problem in another district. The Manua tribe of the Yodda Valley provides an instance of this, *e.g.* :—

1. *Social Homicide.*—It was necessary for the candidates to kill a man before they could qualify for the final stage of initiation. The presence of a Government station in the vicinity of their village made it impossible for them to fulfil this condition, and so many youths found themselves unable to attain adult membership and marriage. For nearly five years they remained in a state of dissatisfaction, which retarded their progress and produced a feeling of resentment against the Government. To consider the problem, a meeting of chiefs was held, and the principles of the custom were analysed. The gathering decided that the essential thing to be proved, before a youth could enter manhood, was the possession of courage, and, as the proximity of the Government made homicide inadvisable, other methods of manifesting the quality must be considered. As a result of the discussion, candidates for initiation were permitted to qualify by killing a wild boar instead of a man. This was communicated to me, and I was invited to attend the initiation ceremony, which proceeded through its final stages, in no way hampered by the substitution of boar-killing for man-killing.

It was also decided that as the homicidal decoration could no longer be won with honour, on account of the abolition of inter-tribal warfare, it would be withdrawn from the final qualification, though fathers, if they wished, could transfer to their sons their own decorations for bravery.

Religious Homicide of the Gulf of Papua is a variant of the methods used elsewhere in Papua to secure a perpetual supply of food. In the Northern Division, where cannibalism has been stamped out, the offerings to ghosts are made by placing articles of food on a small wooden platform (*Wawa*) which is erected outside each house. The ghosts, it is said, visit the *Wawa* at night and absorb the essence of the offering. Some tribes in the Owen Stanley Range reinforce their own soul substance by rubbing into their bodies the fat of deceased relatives as it falls from the corpses while they are lying in the sun on high platforms. Other tribes increase their soul substance by inhaling the steam from a pot of stewing plants which are known to possess the virtues of strength and long life. These and other methods could be exerted to induce the Gulf tribes to abandon cannibalism. Even the most ardent cannibal would pause if he were told, in the right way, that by eating the body of a man unfortunate enough to get killed, he would be more likely to inherit the weak qualities that resulted in the man's death than any of his virtues. Other forms of homicide may be considered in this way.

The success of these operations depends on the officer charged with the transmission of new cultures. In the first place he must be capable of winning the confidence of his people and of maintaining it for all time. Finding themselves dominated by a power superior to their own, the first feeling of the people is one of fear. I have known tribes to live for days on the mountain tops in small caves and miserable shelters of fern-covered aerial roots with no food but the leaves of shrubs to sustain them; on one occasion, the women, in their anxiety to get beyond reach of my party, discarded their babies because they hampered their progress, thus adding to my burden of responsibility seven suckling infants whose needs kept me occupied most of the day and night, since to pacify their vocal assaults and secure sleep for my party, I had to feed these voracious babies for several days with condensed milk, which they sucked from my fingers until I was able to manufacture a comforter from a piece of rubber tube and a fountain-pen filler.

The District Officer who would secure the confidence of his people must be prepared to make many departures from conventional daily life, for once the people realise that the Government is an influence for their own good, the feeling of terror will be replaced by one of trust, which is the desired relationship between a District Officer and his people and the foundation of advancement. At this moment the natives are most likely to test the worth of their District Officer by discussing the elements of their cultures with him and inviting his advice regarding those

antagonistic to Government standards. Happy is the officer who is able to help them in the struggle for readjustment, for he achieves at once, not only the loyalty and confidence of his people, but the satisfaction of diverting their energies into channels of progress and advancement. I use the word satisfaction in its full sense, for on the success of his work depends the happiness of a District Officer. He is isolated from the comforts and pleasures of civilization, sometimes for a succession of years, and his life, one long period of hardship and danger, is devoted, every moment of the day and night, to the needs of his people. But if his policy of administration be reinforced with a knowledge of the requirements of his subjects, the results will bring contentment to the people and satisfaction to the officer and his Government. Therefore any instruction that could help him to understand the psychology of his people would make his task less difficult, and enhance his value to the Administration.

My experience in Papua has convinced me that only by developing the natives and their cultural institutions together can we hope to give them a civilization more beneficial than the primitive life from which we intend to lead them, and to facilitate the achievement of this I would suggest that the policy of administration in New Guinea be reinforced as under :—

1. The general training in anthropological subjects of all District Officers and other persons holding positions of responsibility over natives (particularly a knowledge of the factors that have stimulated progress in other primitive races).
2. The publication and circulation of all existing and subsequent records of New Guinea ethnography for the guidance of such officers.

In conclusion, I would most earnestly suggest that the status of District Officers be elevated and their general conditions improved, so that the man of the Stone Age may have by his side, to help him on his arduous road to civilization, a permanent staff of earnest, capable, and contented officers.

EARLY FIJIANS.

By A. M. HOCART.

[WITH PLATES I AND II.]

PERHAPS the most crying need of anthropology is a certain and reliable method of placing events in time. I do not mean necessarily the dating of events, but the determining of the proper order in which they have succeeded one another. Geology has to do without dates : though convenient, they are not essential ; its main object is attained when it can say, "This happened before that." Anthropology, as a rule, can do no more, but can do it as well.

The usual method so far has been to gauge the relative antiquity of customs by their appearance, just as one judges the age of a horse by its teeth. Customs are referred to one period or another in accordance with the prevailing notions of what primitive man was like. The weirder or ruder a custom appears, the more ancient it is supposed to be.

Geology does not deduce the age of a rock from its appearance, but relies on external accidents such as the position in which it lies, and the fossils it contains. It uses the very simple principle that the later is on the top of the earlier. The historian can no more hope to date his specimens merely by looking at them than can the geologist : he is just as dependent on external accidents. Only his chief difficulty is that customs do not exist in space like rocks, one over the other. Yet there are strata of customs, as well as of rocks ; if they cannot be discerned as easily, they can be proved as certainly.

The purpose of this paper, however, is not to discourse at large upon principles, but to show their practical application to the historical problems of the Pacific Ocean.

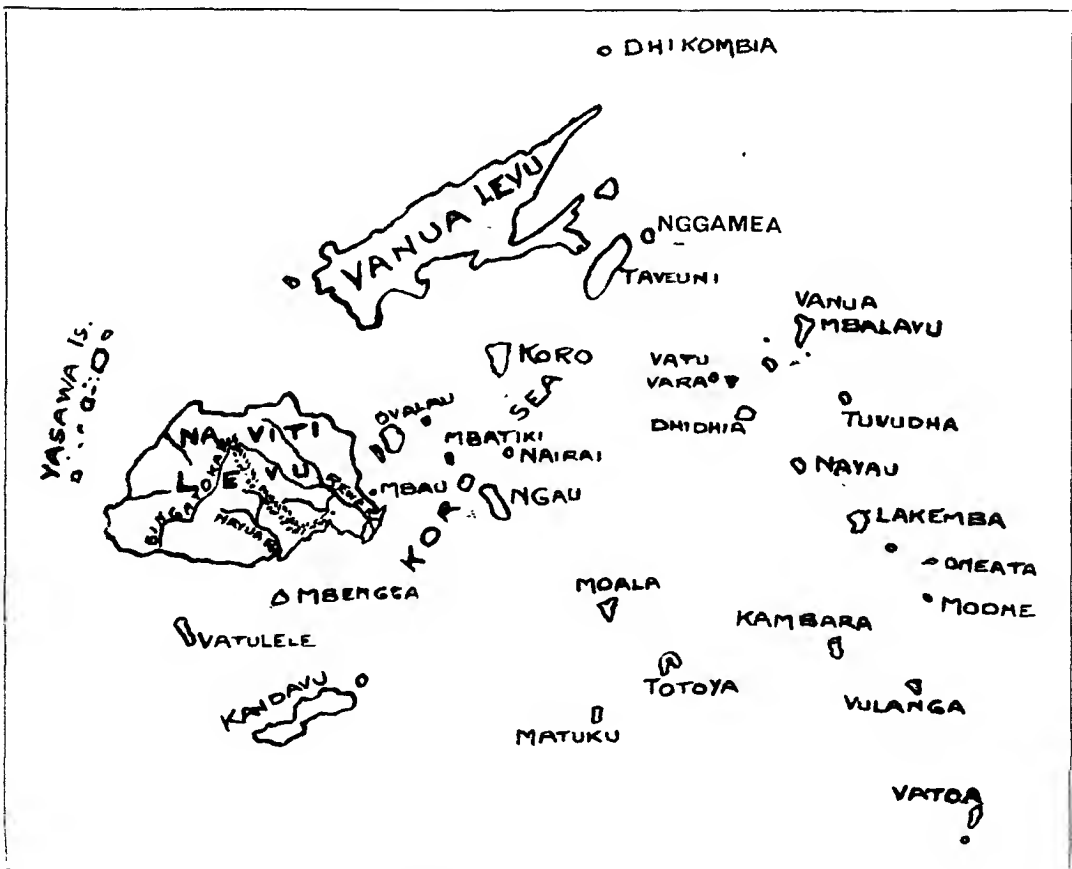
THEORIES OF FIJIAN CIVILIZATION.

The usual view of Fijian civilization is that of a rude or "primitive" aboriginal race overlayed by one or more races of higher culture. An indigenous negroid race, now represented by the hill tribes, is supposed to have been civilized by later coming Polynesians. Fornander is a notable exception, and he has not generally been taken seriously enough. I confess I have found no decisive evidence that the succession of races was that usually held, and not exactly the reverse. If anyone should come along and say, "The civilized folk came first ; then the rude negroids came and over-

whelmed them," who shall gainsay him? Such things have happened not infrequently, and there are no general principles which can decide one way or the other: particulars alone can decide; we will come down to particulars at once.

PRELIMINARY SURVEY OF FIJI.

First of all I must remind the reader that the bulk of the Fijian population is contained in the large island of Na Viti Levu, or "The Great Viti." The great range of hills running from north to south divides the island into two languages: Low Fijian to the west, and to the east High Fijian, which also covers the islands east of Na Viti Levu. The High Fijian population is thickest in the valley of the Rewa river which, rising in the north, flows to the south-east corner and forms the great road into the interior. North-east of Na Viti Levu lies the second largest island, called Vanua Levu. From the eastern end of Vanua Levu southwards runs a string of islands known as Lau, with Lakemba as the chief island and Ono as the southernmost. The Lau group lies halfway between Na Viti Levu and Tonga. Fiji thus forms a ring of islands round the Koro Sea, which was to Fijian culture what the Mediterranean once was to Europe.



1. SKETCH MAP OF FIJI.

The greater part of Fiji is ruled over by chiefs who are invested with divine or ghostly attributes such as *mana*, or miraculous power. They are sometimes spoken of as gods or ghosts (*kalou*), and frequently trace their descent to an ancestor spirit (*Kalou vu*). In short, these chiefs are divine.¹

Round the Koro Sea these chiefs as a rule bear the title of *Tui* or *Tu*, followed by the name of a place, as *Tui Vuna*, Lord of Vuna. This same title exists in Tonga, Samoa, Rotuma, Tokelau.

LOST TITLES.

The Chief of Lakemba, however, is not called Tui Lakemba. There is indeed a god of that name who came from heaven, but no man may bear the title. Yet in a manuscript version I possess of the legend which Fison, in his *Tales of Old Fiji*, related under the title, "How the Levukans came up to Windward," the chief of Lakemba is described as Tui Lakemba. Therefore the title existed in legendary times.

In the same island lies the village of Vakano, now the lowest of the low. It has a god, though, of great prestige, one Tui Vakano who causes rain. There is no chief of that name on record.

The chief of the Lau archipelago is not now called Tui Lau. One very old informant, however, accidentally mentioned a Tui Lau who used to live in Vatu Vara, an island formerly inhabited but now deserted.

Early explorers say the title of Tui Viti, or King of Fiji, did once exist, but had fallen into abeyance. It was revived by the Tongans in favour of the chief of Mbau, off Na Viti Levu. He was not really King of Fiji and was never properly installed as a chief should be.

Here then are four titles which evidently did once exist, but are no more. Where are they gone to?

THE TITLES FOUND AGAIN.

To the islands to the north and east of Fiji: Rotuma, Samoa, Tonga.

Tu'i Lakepa is at present a nobleman in Tonga. He belongs to the Fale Fisi, or "Fijian House." The title is also found in Rotuma.

Tu'i Vakano stands very high in the Tongan peerage. His Fijian origin is well known in Tonga.

I found a Tui Lau in Samoa.

A god called Tui Fiti was worshipped in Samoa.² Samoan legends are full of Tui Fiti and other Fijian chiefs that came to Samoa.³

¹ "Chieftainship in the Pacific," *American Anthropologist*, N.S., Vol. 17, No. 4, p. 634.

² Turner's *Samoa*, p. 62.

³ *Ibid.*, pp. 228-31, 28, 35, 41, 43, 46, 55, 238.

EASTWARD MIGRATIONS.

It is clear that migrations have taken place from the eastern islands of Fiji towards Tonga and Samoa. The Samoan legends show that these migrations were very important.

What was the cause of these migrations? Pressure from the west. In the easternmost parts a few tribes trace their origin back to Na Viti Levu; most of them have no traditions except what has been manufactured for them of recent years. As we go west the proportions are reversed, till in Na Viti Levu we get a unanimity of tribes that place their original home in the hills. If we go to that home, we find it occupied by another tribe which has left its own home higher up in the hands of yet another tribe from higher up, and so on till we are referred back to the now deserted hills of the north coast. These movements began eight or nine generations ago.

We may conclude that the bearers of these lost titles retired to Tonga and Samoa before the tide of an invasion which, starting from the hills of the main island, spread to the easternmost bounds of the Fijian group.

THE ORIGINAL LAUANS.

Who were these refugees? Were they Fijians as we know them to-day, or were they a different race?

At the foot of the great dividing range the people are short, dark, fuzzy-haired, with a deep dent at the base of the nose. As we move eastward they become, as a rule, taller, lighter in colour, the dent of the nose is less marked; wavy, even straight, hair appears in the east. The less negroid appearance of the Easterners is usually ascribed to the Tongan invasion, which began nearly a century and a half ago; but that will account at most for the physique of the Lauans, but not for the rest of the coastal Fijians. Since the migrations took place from west to east, from a region of more to one of less negroid types, we must conclude that previously the eastern Fijians were even more like their Polynesian neighbours than they are now. That is simple arithmetic: subtract the hill type from the Eastern type; the remainder must be something like the Samoan or Tongan.

Ono is the southernmost island, the *ultima Thule* of Fiji. I was told that it was once, not so very long ago, inhabited by "red men," or, as we should say, "copper coloured men." Some called them Tongans, but that is an inference of theirs. This island first became Fijianized when the people of Wadhiwadhi, a Lakemban village, settled there in historical times. Nevertheless the people of Ono until Christian times remained ignorant of Fijian etiquette.

Were these "red men" the last remnants of the ancient Lauans? If they were, traces of them will surely be found in other parts.

LANGUAGE.

The daughter of the Tui Lakemba, who reigned in the days when the Levukans came to Lakemba, was named Sina-te-Langi. The name is not Fijian, but pure Polynesian. *Sina* is the constant name of chiefs' daughters throughout Polynesia, and means "white"; *te* is the Polynesian article; *langi* means sky, and is a Polynesian royal title and a frequent ingredient of Polynesian royal names. Tui Lakemba therefore spoke Polynesian, but that Polynesian was not Tongan, since the Tongan article is 'e, not *te*; nor was it Samoan, since the Samoan article is *le*. This conclusion is borne out by some Polynesian words which occur in the Lauan dialect, and which are not Tongan. Thus the Lauan for a god is *tupua*; both Lauans and Tongans assert that this is not Tongan; the Tongans have the expression *tala tupu'a*, a tale of ancient days, but they have no idea of what *tupu'a* means. I was also assured that the Lauan exclamations *polopolo* and *palapala* did not exist in Tongan.

The reader must beware of extending these conclusions without further warrant beyond the Lau group. For convenience, I am here treating the lost tribes as one people, but it is quite possible that two elements at least, one of them represented by the inland tribes of Vanua Levu, will have to be distinguished on closer inspection. That, however, is immaterial for our present purpose.

MANNERS AND CUSTOMS.

In arts and crafts this people stood much higher than Samoans or Tongans; indeed the Samoans declare that they learnt their mat-making and bark-cloth from Fiji.¹ Certainly, as far as mat-making goes, they did not learn from the modern Fijian, who turns out excellent mats but cannot produce anything like the fine ones which Samoans and Rotumans excel in. It is significant that the nearest approach to fine mats in Fiji is found in the islands of Dhikombia and Ono, the extreme north-east and south-east. They are fine only in the narrowness of their strips, but to the touch they are hard and stiff; there is no point in them except as debased survivals of a lost art. In bark-cloth the eastern Fijians still maintain their superiority. In Lau they make both the Tongan and the Fijian style, the Tongan for ordinary use, but the Fijian is reserved for weddings and is highly esteemed by the Tongans, who cannot make it.

Society was feudal: the chiefs were divine, and some, at least, connected with the sky. It is indeed possible that the supreme chief, Tui Viti, or whatever his title, was spoken of as Langi or heaven, according to the custom that obtained in other parts of Polynesia.² This would explain the title of Dhava Ki Langi, or "Tributary to Heaven," borne by the chiefs of Mbengga. Williams interprets it as subject

¹ Turner's *Samoa*, p. 123.

² *Chieftainship in the Pacific*.

to no one on earth, therefore independent ; a more prosaic explanation is " Tributary to the King," that is to say, a direct vassal of the supreme Lord of Fiji.

These titles were in the gift of certain families ; these families did not necessarily elect the chief, but they performed the ceremonies of installation. For instance, the title of *Tui Levuka* was bestowed automatically on the chief of Mbau by the tribe of Levuka, who now dwell in Lakemba.

It may be asked why Fiji is at present covered with chiefs called *Tui* if that title belongs to a people partly expelled, partly conquered. Just as the Germanic invaders of the Roman Empire usurped the Roman titles of Cæsar, duke, count, so the black barbarians of Fiji took the titles of those they overcame. This is not mere surmise : it actually happened. For instance, the Levukans who now live in Lakemba bestow their title of *Tui Levuka* on the chief of the Mbauans, who originally came down from the interior and drove them out of their ancient home. The surrendering of titles by the conquered was a common event in Fijian history.

The chieftainship was dual after the fashion of Japan¹: the Mikado being called *Tui*, the Shogun *Sau*. Our reasons for believing this are that the dual chieftainship exists in Tonga and Rotuma ; it is common among the coastal High Fijians ; in the Rewa delta it is the rule ; but as we ascend that river it disappears suddenly and completely. It cannot have been introduced by the hill tribes, since they have not got it : they can only have caused its disappearance among the coastal tribes that have not got it now. For instance, in legendary times we hear of a *Tui Lakemba* ; in historical times the chief of Lakemba bears the title of *Sau*. The suggestion is that originally there were both a *Tui* and a *Sau* ; the *Tui* went over to Tonga, as we know, and only the *Sau* remained. The dual tradition, however, is still strong, and I have heard it laid down in Lakemba that every Fijian chief has his second.

Society was certainly organized on the dual plan with two exogamous moieties and matrilineal descent. One division was nobler than the other, so that a lady of rank always married an inferior, as was the custom, Dr. Lowie informs me, among the Natchez of America. I know it is heresy to assign the dual organization to a people of considerable culture and deny it to rude hill tribes ; but it cannot be helped. The dual system, as described above,¹ exists in that part of Vanua Levu which appears to have been least affected by the invasion. It exists somewhat disguised and not easy to identify in Eastern Fiji and on the east coast of Na Viti Levu. I allude to the common division of villages into "nobles" on the one hand and "the land" or "the teeth of the land" (*mbati ni vanua*) on the other. The custom of *tauvu* or tribal cross-cousinship is certainly a relic of the dual organization : it is confined almost entirely to the tribes round the Koro Sea.² What traces of the dual organization exist in the hills are of more recent origin, according to the statements of the natives themselves and to genealogies. In the hills the origin is known, on the

¹ Note on the Dual Organization in Fiji, *Man*, Vol. xiv, No. 2.

² The Fijian Custom of *tauvu*, *Journ. Roy. Anthropol. Inst.*, Vol. xliii, 1913, p. 101.

coast it is immemorial. Unfortunately, this is a complicated subject, and impossible to discuss with all the precision and finality that might be desired until the whole material has been published.¹

When the time approached for young ladies of rank to be married, they were "forbidden the sun" (*tambu singa*), that is to say, they were confined to the house for months so that they should not be exposed to the sun. We know this because Sina-Te-Langi, the daughter of Tui Lakemba, was so confined, and also because this custom is quite unknown inland of Na Viti Levu, except in fairy tales about the eastern islands. Here, then, we have a custom which would generally be put down at sight as a "primitive" puberty rite, but which turns out to be the property of a comparatively civilized people; its name and description suggest that it is but a corollary of that elaborate theology which we can discern behind the institution of divine kingship, and which it is one of the most fascinating tasks of the historian to reconstruct. We can even make a guess at the underlying reason, that it was to prevent the princesses from becoming prematurely the brides of the sun. This is not an unreasonable suggestion, since in Egypt, another home of divine kingship, the sun-god, as Dr. Blackman informs me, was wont to lie with the Queen.²

RECONSTRUCTION.

I will not pursue this process of reconstruction any farther. Such is not the aim of this paper, nor is it possible to deal adequately with the subject until the material is before the public. My purpose is merely to show how the historian, if he will only set to and labour with patience, despising no detail, can reconstruct lost civilizations from a few fragments with as great ease and certainty as the palæontologist can deduce the whole animal from a few bones.

THE Viti Folk.

The reader must not imagine that petty details can only lead to petty conclusions of merely local interest, and cannot serve for larger constructions of universal importance. Repeating these processes in neighbouring regions, we can drag them into the vortex and, gradually going farther afield, involve half the world.

As it is, we see the whole Pacific being drawn into Fijian affairs.

Polynesian scholars have long ago pointed out that the name of Tahiti is the same as Na Viti; for *ta* is the Tahitian article, as *na* is the Fijian, and *v* appears in

¹ For Fijian scholars who might take exception to these statements, I will just mention the following facts that may give them pause: the word *tauvu* is not used in the hills; it is sometimes translated *veimbatiki*, or the relation of noble to *mbati*. If the relation of *mbati* = the relation of *tauvu*, and *tauvu* is a relic of the dual organization, then the division into "nobles" and *mbati* is also a relic of the dual organization.

² Dr. Blackman draws my attention to *Hamlet*, Act II, Scene ii, "Let her not walk i' the sun; conception is a blessing; but not as your daughter might conceive."

Tahitian as *h*. Hawaiian legends are full of a land called Kahiki, which is not Tahiti. The name of Tawhiti is known to the Maori, and the Hiti were a people who dwelt in Chatham Island before the Moriori dispossessed them.¹ We have, therefore, to recognise the existence of a Viti people who have found their way to many of the Pacific Islands. Was Fiji their original centre of dispersion, whence they draw their name, or was it merely one of their numerous colonies? The present evidence does not allow us to decide. Researches in Tahiti and elsewhere are necessary.

Tangaloa is one of the great gods of Polynesian mythology. Obscure reminiscences of him are found in the Banks Islands.² The ancestor gods, the *vu* of Fiji, also exist in those islands, but their names are forgotten. It would seem, then, that a religion somewhat similar to the Vitian once flourished there.

In the Western Solomons the word which means chief in some parts, in another means god. A ceremony which in Rotuma was celebrated at the tombs of deceased sacred chiefs was in Eddystone of the Solomons performed at the shrines of the gods.³ The inference is that the Eddystone gods are chiefs and that the institution of divine kingship did once exist in those parts.

Mr. Balfour has recently pointed out the close resemblance between the arts of Easter Island and those of the Solomons.

Everything suggests that the barbaric invasion was not confined to Fiji, but swept the whole of Melanesia. Mr. Perry's researches contain indications that Malaysia was also involved. It is only to be expected that the commotions of Polynesia were caused by happenings farther west. For the whole world is one solid mass, and no part can be set in motion without the vibrations extending to the utmost bounds. Therefore, if we once strike the right method it will justify itself by the complete agreement of all the results obtained independently in various parts of the world. Malaysia will confirm Melanesia; India and Japan will bear out Malaysia, and will themselves find support in Persia and Mongolia. To the east Peru and Mexico will add the weight of their testimony and the more savage tribes of America will uphold them.

SOUND CHANGES AS LANDMARKS.

We have been carried away far beyond the original limits of our inquiry. Let us return to our Pacific Islands, where we still have one task to complete, and that is to illustrate the use of sound changes in dating events.

Extensive changes have at some time taken place in Rotuman pronunciation: *k* has been reduced to a glottal stop', *t* has become *f*, *f* has become *h*. The Fijian titles in Rotuma have escaped these changes, thus Tui Lakemba is called Tū' Lakepa, not Fū' La'epa as might have been expected. Therefore, these refugees must have

¹ Tregear's *Maori Dictionary*, s.v. Tawhiti

² *Chieftainship in the Pacific*, p. 634.

³ *Ibid.*, pp. 634 and 636.

arrived in Rotuma after this phonetic revolution had been completed. On the other hand, the herald's title has undergone the sound change: it is Fu Mara'e, but in Fiji it is Tu Rārā.¹ Therefore, the herald's dignity is more ancient in Rotuma than these sound changes, yet not as ancient as the earliest layer in the Rotuman language, since *mara'e* is a Polynesian word, and the earliest elements in the Rotuman language are not Polynesian.² The Fijian national game of *tingga*, or reed-throwing, is called *tika* in Rotuma: the game must, therefore, have come in after the sound changes and it is reasonable to suppose that it was brought by the Vitians, Tū' Lakepa and the rest. We could go on indefinitely sorting out Rotuman customs into at least three linguistic periods; but these examples are enough; it is the principles we are interested in here.

PRINCIPLES.

When we examine the principles that have been applied, it appears almost ridiculous to formulate some of them, as they are nothing more than truisms. Thus:

If anything which used to be in A is now in B, it must have moved from one to the other.

Anything which has undergone a change must have existed before that change.

If two customs are identical with a third, they are identical with one another. Thus, if the tribal bond of *tauvu* has the same origin as the dual system of Vanua Lēvu and the institution of "teeth of the land," then these two latter also have a common origin.

Identification is indeed one great weapon of comparative history in general, as it has long been in comparative philology in particular. When we have with certainty identified two customs which at first appeared unconnected, we are beginning to move forward. But the process of identifying is the rub: it is no longer working by axioms, but largely by circumstantial evidence. To guess the original identity of two customs behind the divergences induced by time is in part a knack; to prove it is a matter of common sense. If anyone is determined not to accept the common origin of two customs nothing will convince him. If anyone chooses to argue that if the Latin and the Sanskrit for mother resemble one another, it is the result of chance or the universal laws of the human mind, he is free to do so; but he will never get any farther.

Organic connection is another great resource of comparative history. If we can show that any custom fits naturally into any system, it is highly probable that it belongs to that system. Supposing we had succeeded in restoring the system of ideas out of which divine kingship arose as it is known in the Pacific, and supposing we could deduce logically from it the confinement of noble maidens at puberty, then we should have strong reason to believe that this custom is not primitive, but the

¹ *Mara'e* = *rara* = village green.

² Cp. "Rotuman Conceptions of Death," *Man*, Vol. xi, 1915, No. 5.



FIG. 1.—LAKEMBAN BARK-CLOTH.



FIG. 2.—LAKEMBAN BOY.



FIG. 3.—MBAUVAN BOY.

EARLY FIJIANS.



FIG. 1.—MAN OF NAKOROSULE, UPPER BEWA.



FIG. 3.—MAN OF KAROUTARI, VANUA LEVU.



FIG. 2.—MAN OF NAVATUSILA, UPPER SIGATOKA.



FIG. 4.—WOMAN OF KAROUTARI.

invention of a highly organized people. I have elsewhere¹ suggested that the right of the sister's son to plunder his uncle is an integral part of divine chieftainship, *i.e.* a natural consequence of the divinity of chiefs: if this can be definitely confirmed it cannot be a survival of a primitive mother-right as is commonly supposed. Of course it must always be remembered that customs belonging to one cycle can be absorbed by another cycle and adapted, as, for instance, heathen customs have been absorbed and adapted by Christianity.

Such are a few of the principles that can be analysed in these researches. Their justification must be in their results.

¹ *Chieftainship in the Pacific*.

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RAIN-MAKING AMONG THE LANGO.¹

By J. H. DRIBERG.

THE practice of rain-making and the observances connected with it vary according to the four divisions of the tribe, the Jo Burutok (to the south), the Jo Kidi (to the east), the Jo Moita (in the centre), and the Jo Aber (to the north and west), and it will become evident from the following notes that the variations are due to the influence of neighbouring tribes, as it is probable that the introduction of these ceremonies should be placed within the last three centuries. Among the Jo Kidi, Jo Moita and Jo Burutok the ceremonial is most fully developed, whereas among the Jo Aber, while there is little ceremony, there is at least one custom which derives its origin from their northern neighbours.

Preliminary, however, to my main thesis, an account should be given of a quinquennial festival known as the *Ewor* or the *Aworon*, the festival of honouring (*woro*, to honour, to reverence) the aged and the men of old, as, though it is concerned with all aspects of native life, its main motive is the instruction of the young men in the mysteries of rain-making. This festival is universal among the Lango, with the exception of the Jo Aber.

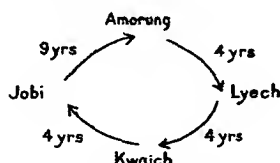
The *Aworon* is essentially a quinquennial festival, but at the end of every sixteen years there is a gap of nine years, instead of four, after which the cycle recommences. This is explained by the fact that for rain-making purposes the initiates are divided into four groups, named after certain animals:—

- A. *Lyech* (elephant), with which are associated *ekori* (giraffe), *aputiro* (=kul, wart-hog), and *etuku* (zebra).
- B. *Kwaich* (leopard), with which are associated *ekwaro* (cerval) and *ogwang* (meercat).
- C. *Amorung* (rhinoceros), with which is associated *alop* (hartebeeste).
- D. *Jobi* (buffalo), with which are associated *engato* (lion) and *apoli* (water-buck).

Each individual *Aworon* is named after one of these animal groups, and the rain festivals for the next four years are said to belong to that group (though actually the

¹ A Nilotic tribe to the N.E. of the Uganda Protectorate, called by their Bantu neighbours Bakedi, by Nilotic neighbours Miro, and by Hamitic neighbours Miro and Atere. Lango, being a Hamitic tribal name, has probably been usurped by our tribe in the past, possibly at the time of the disruption of the Shilluk nation by the Hamites in the sixteenth century.

initiates in the group have few special privileges and no duties). The cycle of *Aworon* is as follows, starting with the *amorung* group:—



The last festival took place in 1915 and was a *jobi* year, and the next should thus be due in 1925. The reason for the interregnum after the *jobi* is that the *jobi* are said to ripen the grain (*jobi ocheko kal*) and accordingly their influence persists longer than that of the other groups, but I am unable to trace any connection between this belief and the current local view which assigns heavy rains and floods to cycles of twenty-one years. There is a second, and probably a more plausible, reason given for this interval, viz., to allow initiates to die off and to make room for their successors. Already representatives of *amorung* and *lyech* are scarce.

The *jobi* call the *lyech* their fathers (*papogi*), and the *kwaich* call the *amorung* theirs, for reasons which will subsequently become apparent, and the few discrepancies in practice in the four *Aworon* groups will be found to be between the *lyech* and *jobi* on the one hand and the *kwaich* and *amorung* on the other. Further, though each group has its own specific songs, it is significant that the *jobi* and *lyech* share *awe*le (pigeon) and *aweno*, while *amorung* and *kwaich* share *awalu* (crested crane) and *okokom* (vulture) songs.

The festival takes place in the month of *Aduoduot*¹ (November) at three different localities. The Jo Burutok, embracing Chakwara, Awelo, Ekwera, Aputi, Kangai and West Dokolo, hold it at Ekwera; the Jo Kidi, embracing Batta, Barr, Aloï, Abako, Orumo, Amugo, Omoro and East Dokolo at Abako; and the Jo Moita, embracing Chiawante, Kaduku, Nabieso, Kinomo, Kagwata, Kamaich, and Akalu, at Alipa. It should be added that though the Jo Aber do not hold the *Aworon* festival, a few representatives from the west, near Kibuzi, usually attend the Moita *Aworon*.

When the festival is due the *awobi*, or young men who have reached the age of puberty and have not yet been initiated, gather from all the places detailed above at their respective points of assembly; with them come the old men, versed in the mysteries, especially all the old men whose group year it may be; these have no option, but must attend. Thus, in 1915, all the surviving *jobi* initiates of 1891 were bound to attend. When they have all gathered, the *awobi* are led by the old men to a traditional sycamore tree, and under this the *awobi* have to sleep for the next three nights. The old men return at nights to sleep in villages, but spend the days in teaching the *awobi* the duties of citizenship, the lore of hunting, the art of fighting,

¹ In modern Lango the month is known as *Adudu* or *Adudu-Otukit*, but the obsolete form is used by old men in referring to the *aworon*.

and the traditions of their race ; lastly, they are taught the mysteries of rain-making, together with the rain dances and the songs appertaining to their group. The *agara* or dance bells are not worn during tuition at the *Aworon*.

Just before dawn of each day is sung the bird song peculiar to the group whose *Aworon* it is. These songs are only sung at the *Aworon*, and have no bearing on rain-making.

Kwaich and *amorung* sing :—¹

Awalu kitem' i bai, a a, awalu kitem' i bai. Apak Awalu oruk' i bai, awalu oruko kiya, oruk' i bai.

(The crested crane starts at daybreak, *a a*, The crested crane starts at daybreak. *Recitative.* The crested crane sings at daybreak, the crested crane sings all night long, it sings at daybreak.)

En ene okokom obeluny, en ene okokom obeluny : oruk' i bai : en ene okokom obeluny.

(That is he, the vulture, he alights, that is he, the vulture, he alights : he croaks at dawn : that is he, the vulture, he alights.)

A a, aluru oya : pap' ochiro kome. A a, aluru oya : pap' okedo kore. A a, aluru ye, a a, aluru ya a a.

(*A a*, the durrha bird arises : his father branded his body. *A a*, the durrha bird arises : his father dappled his breast. *Aa*, the durrha bird *ye, a a*, the durrha bird *ya, a a*.)

Jobi and *Lyeck* sing :—

*Yei atula iia, yei atula iia. Apak Awele papo pa alukangoli.*²

(*Yei* large-headed *iia*, *yei* large-headed *iia*. *Recitative.* Pigeon father of white-brow-and-spreading-horn.)

In addition to other bird songs, the following two songs are sung by the *jobi* and *lyeck* groups at the *Aworon* only, but all other songs which are sung at the *Aworon*

¹ Songs of a ceremonial nature all consist of a chorus (*wer*) and a solo or recitative (*apak*). It is almost impossible, even by means of shorthand, to obtain the words of songs and especially of the *apak*, and the essential intonations cannot thus be reproduced. The difficulty is the greater in that they will not repeat the songs to order. In several of the instances below it will be observed that the *apak* has been omitted or much abbreviated. This is entirely due to the difficulty in recording them, and it should be added that though only one *apak* is given to a song in each instance, actually the chorus is repeated time after time, each repetition being followed by a similar *apak*. Grammatically the songs frequently differ from the ordinary idiom and from considerations of rhythm pronouns and prefixes are treated with great freedom. *Vide* also note ¹, p. 62.

² *Atula* and *alukangoli* are both epithets applied in this context to the buffalo. The meaning is not clear, except in so far as the pigeon is one of the patron birds of the *jobi* or buffalo group.

are preliminary to ceremonial use at the rain festivals and will be noted subsequently.

Iya alukangoli alem, a a, iya alukakore alem. Akomol alukakore.

(Thou arisest, white-brow-and-spreading-horn, O hornless one, *a a*, Thou arisest, dun-brow-and-spreading-horn, O hornless one. O dappled buffalo dun-brow-and-spreading-horn.)

A a, egwapeto kangiro, a a, egwapeto kangiro, a a, egwapeto kangiro.

(*A a*, dusky eland, *a a*, dusky eland, *a a*, dusky eland.)

All the day is spent by the *awobi* in undergoing tuition, and in the evening they go to fetch the food. They may not enter a village during these three days, but the food (in the cooking of which no salt may be used, while the beer must be served cold) is placed ready for them by unmarried girls in the *bar* or goat pasturage, and there each struggles to get as much as he is able. *Awobi* who come from a long distance bring uncooked food with them, and it is cooked by women in villages near at hand. During this period there is an absolute truce, even in pre-administration days, when it was unsafe for an unarmed man, much less a woman, to walk from one village to another during the day. All spears, except the sacred spears of the old men, are left in the houses, and may not be brought out under pain of death: a man's worst enemy is saluted by him, even though a recent blood feud is between them. Any transgressor of the peace truce is killed and his village is burnt. The *awobi* are armed only with hide lashes and withies of the tree *epobo* and ropes of plaited grass, and with these they severely trounce any passer-by or anyone who remains in a village, without fear of subsequent retaliation. No sexual intercourse is permitted during these three days, and only old men and children and *awobi* who have already been initiated may enter villages. The *awobi* bring the old men, their teachers, food every evening under the tree, after which the latter go to sleep in neighbouring villages. Thus for three days and three nights the *awobi* are taught and sleep under the sycamore tree and on the fourth day they return to the village.

Before returning to the village, however, the *awobi* first kill a ram of the colour of a small bird called *alibor* (grey) and hence named after it. It is cut up ceremonially (*i.e.*, it is not first skinned, but the meat and skin are cut off together in strips), and is put on spits over a fire under the sycamore tree. While it is cooking the *awobi* and old men proceed together to a *Nam* (*i.e.*, a lake, river or marsh), to the traditional spot, and there the former are washed and have water poured over them by the old men.¹ On their return the old men sit and eat the meat of the ram under

¹ This and the subsequent ceremonies indicate that the occasion is one of especial sanctity necessitating a careful ablution before the initiates may be readmitted into the normal life of the tribe. The prohibition on the use of salt is applied also to women for four days after confinement, and would indicate that for the period in question the *awobi* are marked off from the rest of the tribe by a condition of moral regeneration.

the tree, while the *awobi* go and wait outside the village: they may not partake of the meat. Having finished their meal, the old men gather up the ram's *we* (half-digested matter from the intestines) with the grass on which the blood of the slaughtered animal fell (called for this occasion only *kodi*), and eat it.¹ They also collect all the refuse of the meal and all the ashes of the watch-fire and carefully deposit them in the river at the spot where the *awobi* were washed.

Having done this they proceed to where the *awobi* are waiting outside the village (about 2 p.m.) and the women of the village perform the ceremony of aspersion (*kiro*, to sprinkle ceremonially). The *awobi* stand in a circle round them and are sprinkled with water in which has been mixed the root of a tree called *kwong*, which has been first masticated by the old men: the leaves of a lilac called *olwedo* are used as sprinklers. Were the ceremony not observed all the *awobi* would die.

Warm beer and food cooked with salt are ready in the village for the *awobi*, but before they may enter there is still one ceremony to be undergone. They are each anointed with the beer and the food by the old men in the usual manner, *i.e.*, on the forehead, each cheek and each breast. They are now free to return to the village, but may not drink the beer till sundown, when the *awobi* who have been initiated drink it in little pots apart.

Meanwhile the women have been busy brewing beer for the teachers, the flour having been rounded up by voluntary contributions, and now the *awobi* have to plaster the floor of a large house with cowdung and to strew leaves on it, that their teachers may drink there in the evening. Each teacher has now a disciple or servant (*achapan*),² who addresses him as father, though he may be no relation. The servants of *lyech* teachers are chosen from boys whose age denotes that they will some day be initiated as *jobi*; and the servants of *amorung* are similarly chosen from prospective *kwaich*—explaining why the *jobi* and *kwaich* call *lyech* and *amorung* their fathers, as noted above.

Purposely the old men leave their stools at a distance from the village at which the beer is to be drunk, and at sundown send their temporary servants to fetch them. They must run as fast as they can there and back in order to get the best place for their master in the beer house, and while the old men are drinking each stands behind his master's chair to wave away the flies and to prevent them falling into the beer. Some of the beer is left to be drunk next day. An old man who is pleased with his servitor, with his attentions and zeal, will in future make him presents from time to time, and will even pay the indemnity due for the latter's sexual indiscretions.³

¹ The *jobi* and *lyech* groups do not eat the *we* and the *kodi*, but throw them into the river. On the other hand, they eat the skin of the ram.

² As it is not customary among the Lango to have servants of any kind, this point assumes more importance.

³ Among the Jo Burutok each *awobi* gives the old men a chicken to eat with their beer and the latter subsequently reward them with a chicken in return. The leaves used on the floor of the beer house must, among the Jo Burutok, be from the tree *odugo*. Elsewhere it is immaterial.

The *Aworon* festival or initiation ceremony is now complete, and if it is a *jobi* year all the initiates become *jobi*, *kwaich* if a *kwaich* year, and so on, irrespective of the group to which their fathers belonged. They are taught by all the teachers, whether the latter belonged to that year's group or not.

Mention has been made of the sacred rain spears, and it would be well to amplify the reference before proceeding to the actual ceremony of rain-making. There are three types of spears used for this purpose. The first, which is handed down from time immemorial and of which there cannot be more than ten in existence, is a heavy-bladed, long-shafted, unwieldy spear, black with the smoke and the grime of ages. It is used for the ceremony known as *agat*, or consecration, and is held in the hands of the consecrator.

The second is known as *tong ali*ro, a long-bladed spear with a long neck and socket (2 feet), which is solid and ends abruptly without a shaft. It was originally made by the Jo Abur (a Hamitic tribe), but is now also made by the Lango. This is the true rain spear.

The third is the *tong akoda*, or barbed spear, such as is used for hunting crocodiles. It may have from two to six barbs, but like the *tong ali*ro has a solid socket and no shaft. The object of this spear is to avert locusts, the barbs being intended to resemble locusts' wings.

Should a spear be lost or destroyed in war, and it is desired to replace it, great care has to be observed in approaching the spear-smith, as there is always the danger that your desire to obtain a rain spear is prompted by a malicious wish to "tie up" the rain and to cause a drought. The making of rain spears is, among the Lango, confined to the clan known as Jo Angodya, and the present smith is one Alecha of Kaduku. The applicant first makes his wish known to the clan Jo Alaki, who if after investigation they consider him a *bona fide* case demand two hoes, which they pass to the Jo Angodya, and from which Alecha makes the spear. The spear is made free, as any payment would destroy its efficacy. (*Tong kot mam okokere*, i.e., A rain spear may not be ransomed.)

A new rain spear has to undergo the ceremony of *lwoko* or *lamo tong* (to wash or consecrate the spear) before it can have any value. This is done at the porch of the owner's house, where water is brought in a calabash bowl, and the spear held upright in it, point downwards. It is washed in the water by an old man conducting the service, who having first spat in the water intones the following prayer:—"May the harvest be a rich one. You, spear of the rain, bring good rain and fruitfulness, that our granaries may be filled and that the hands of our children be not empty; that the hearts of our women may rejoice and that they multiply unto us sons and daughters. This, spear of the rain, do and bring unto us abundance of all things." He then stands upright and, holding the shaft of the spear, dips the blade into the bowl, and with it flicks the water first east and then west, still chanting a similar prayer. Finally he sprinkles the water, scooping it up with his hands and throwing

it high, first east and then west. The owner of the spear also, having spat into the water and uttered a prayer for fruitfulness and good rains, sprinkles the water. The spear is stuck into the ground, blade down, near the porch, and is not moved into the house till the harvest is ripe. During the ceremony and till after the harvest the spear is swathed with a convolvulus called *bomo*.

The ceremony of rain-making is known as *lamo kot* or *mvelo kot*, to consecrate the rain or to dance the rain. It takes place annually from April to July, usually in April, but varying according to the condition of the rains. It may only be performed once for any given area. The ceremony is held, for the Jo Kidi at Abako, for the Jo Burutok at Bata in Ekwera, and for the Jo Moita under a fig tree near Kaduku.¹ The ceremony for the three divisions is the same, but the ritual of the Jo Aber will be treated separately.

As a preliminary to the rain festival, beer flour is gathered and taken to the house of the local head of the Jo Inomo clan, of which clan Oyuku was a celebrated member years ago, and whose descendants to this day have the privilege of presenting the sacrificial goat. His wives and the women of the village prepare the beer.

First Day.—The old men and *awobi*, all with their spears, sacred and profane, but not with more than one spear each, lest they frighten the rain, wearing chaplets and necklets of convolvulus, called *bomo*, and with the *agara* or bells bound round their legs and their spears also festooned with *bomo*, proceed to the traditional fig tree, either the sycamore or the ordinary fig, accompanied by the women and girls. On arrival, the men all stand under the tree, while the womenfolk stand apart, and the old men, irrespective of their animal groups, perform the ceremony of *agat*, or consecration of the spears, each using one after the other the spear kept for that purpose. The men stand in a semicircle towards him, and at each response to the consecrator's litany sway their spears forward towards him.

The *Agat* :—

<i>Solo.</i>	<i>Response.</i>
<i>Waloyo yamoni.</i>	<i>Waloyo.</i>
<i>Wan wamito kot ochwe, oony akirok chutok.</i>	<i>Oony.</i>
<i>Oami ! in, kot, alami ichwe. Ka i chwe, beber.</i>	<i>Beber.</i>
<i>Eryamita ka jigi jigi.</i>	<i>Eryam.</i>
<i>Ka kot ochwe chamw' ochek, beber.</i>	<i>Beber.</i>
<i>Ka atino olelo, beber.</i>	<i>Beber.</i>
<i>Ka kot ochwe, ber, kot ochwe, ber : ka mon gilelo, beber.</i>	<i>Ber.</i>
<i>Ka awobi giwero, ber.</i>	<i>Ber.</i>
<i>Eryamita ka jigi jigi.</i>	<i>Eryam.</i>
<i>Ka kahwa ochek, ber.</i>	<i>Ber.</i>

¹ The Jo Moita *aworon* is the first to be held and is attended by a few representatives from the Jo Burutok, who, however, are mere spectators, and take no part in the proceedings.

<i>Solo.</i>	<i>Response.</i>
<i>Ka monwa olelo,</i>	<i>Ber.</i>
<i>Ka atino oleo,</i>	<i>Ber.</i>
<i>Ka awobi oweru,</i>	<i>Ber.</i>
<i>Ka adongo olelo,</i>	<i>Ber.</i>
<i>Ilech i dula.</i>	<i>Ilech.</i>
<i>Kalwa opong dero.</i>	<i>Opong.</i>
<i>Alech alelech.</i>	<i>Alech.</i>
<i>Ka yamo odok Burutok, ber.</i>	<i>Ber.</i>
<i>Ka kot odok Burutok.</i>	<i>Ber.</i>
We overcome this wind. ¹	We overcome.
We desire the rain to fall, that it be poured in showers quickly.	Be poured.
Ah ! Thou rain, I adjure thee fall. If thou rainest, it is well.	It is well.
A drizzling confusion.	Confusion.
If it rains and our food ripens, it is well.	It is well.
If our children rejoice, it is well.	It is well.
If it rains, it is well ; if our women rejoice, it is well.	It is well.
If our young men sing, it is well.	It is well.
A drizzling confusion.	Confusion.
If our grain ripens, it is well.	It is well.
If our women rejoice,	It is well.
If our children rejoice,	It is well.
If our young men sing,	It is well.
If the aged rejoice,	It is well.
An overflowing in the granary.	Overflowing.
May our grain fill the granaries.	May it fill.
A torrent in flow.	A torrent.
If the wind veers to South, it is well.	It is well.
If the rain veers to South, it is well.	It is well.

Following on this the men all sit down in orderly rows under the tree for the *Arab* or prayer. The old men lead the prayer and the rest respond in a monotone, concluding each prayer with a long-drawn, deep-throated moan. The prayers are directed to Min Jok, Mother of God, and invite her assistance in their festival to ensure good rains and a satisfactory harvest, and she is urged to discover to them any whose hearts are evil and who purpose concealing or withholding the rain by magic. They then proceed to dance the *awala* or bell dance (*awala* = *agara*, bell), a synco-pated dance only performed at this ceremony. There is no music, but the dancers

¹ Explained by the last line. The dry season wind is easterly and the rains come when the wind veers to the south.

are formed into a circle and a soloist stands in the centre, singing while they dance and join in the refrain. All the performers make the gestures and sounds appropriate to their animal group and imitate their actions. Only such songs are sung as belong to the animal group which last celebrated the *Aworon* before the festival: thus at the present time (1918) only the *jobi* songs would be sung. In the centre of the circle one, or at most two, pairs of dancers perform a *pas de deux*. The women dance apart and at the end of each dance *ngato* and *goyo jira*, i.e., perform the victory dance and raise the cry of victory as after battle. Four or five dances being concluded, the spears are gathered and stuck point downwards into the ground under the tree. (Were they stuck point upwards, the rain would be frightened away.) The sacred spears are also stuck in the ground there, and none of the spears is removed till the whole business is over. A little special beer is brewed under the tree in an *agulu ma doge aryo* (a sacred earthenware pot with two mouths), and is poured into an *obuto* (a drinking-cup only used in these ceremonies) and is left there. All return home.

Second Day.—Nothing is done.

Third Day.—All go to the tree again and dance the *awala*. The oldest man takes with him a *gweni ameri* (black and white chicken)—also called *ataloka*, because being of more than one colour it is symbolic of the rainbow (*ataloka*). The chicken is held by the wings and waved over the spears and fluttered against the tree (tech. term, *buko*), and is killed and eaten there by the old men under the tree, where its bones and feathers are left collected into a heap. All then return home.

Fourth Day.—As before, they proceed to dance the *awala* under the tree, taking one he-goat and one ram.¹ The privilege of presenting these animals belongs, as has been noted above, to the clan Jo Inomo, and more particularly to the Oyuku family of that clan. Having danced under the tree, they go in procession chanting a minor dirge to certain villages, by which it is customary for the rain procession to pass from time immemorial. The procession first marches round the village, and then entering it, they stick their spears points down in a courtyard in the middle of the circle of dancers. The *awala* is performed as before, and while it is in progress a bowl² of water is fetched and placed near the spears. When the dance is over, the old men, one after the other, asperse the water, using for the purpose a plant of the thistle order called *ekwanga*: the water is sprinkled up over the dancers towards the east, while the operator mutters a prayer much on the same lines as that already:

¹ Among the Jo Burutok and Jo Kidi the goat and the ram are of the colour called *amuge* (brown), ceremonially also called *ataloka*. The Jo Moita only use a black goat, as it is symbolical of rain clouds. In no case may a red goat (*arema*, blood-coloured) be used as, symbolizing blood, it would be unlucky.

² The water is fetched in an *awal makech* (bitter, i.e., new calabash), and the privilege of furnishing the *awal*, and also the *obuto* and *agulu me doge arvo* referred to above, belongs to the clan Jo Agorya.

recorded in the ceremony of *lwoko tong*. Proceeding thus from village to village, they return to the tree late in the afternoon.

On their return the goat and ram are ceremonially killed¹ (i.e., by closing all the orifices of the animals till they die of asphyxia) under the tree, cooked and eaten by initiates of the animal group whose rain year it may be, e.g., the *Jobi* would eat them during the years 1915–1919. The fire for cooking the meat must be made over the remnants of the chicken killed on the previous day. Dung from the intestines is smeared on the spears and on the tree, and the old men each take a sip of the *kongo me obuto* (the special beer brewed on the first day). Fresh, cold water is drawn from a neighbouring spring at a traditional spot and each old man drinks a little, while other water in which medicines prepared from the roots of certain trees² have been mixed is thrown up into the air (not aspersed over the people), and an old man climbs the tree, sprinkling the medicated water on its leaves, praying the while for good rains and harvest. When the dance is finished each man pulls up his spear and they all go home. The beer which was prepared before the festival started is now drunk by the old men at the house of the *Won-kot*³ (owner of the rain), and no one else may drink it except by invitation. If anyone should be so bold, he would fall down dead and could only be brought to life by the grace of the rain-maker, who will, if he so wishes, pour water on him to this end. The rain spears are stuck in the ground by the porch of their owner, and so long as they stay there the rain will fall satisfactorily. They are removed at the beginning of the dry season in order to permit the rain to stop and to enable the grass to dry for the burning.

At the end of the dance the *Won-kot* and one old man take the feathers and bones, heads, skins, ashes of the chicken, goat and ram, which have been killed, and bury them secretly in a river or swamp.

On the last day also before the goat and ram are killed, another kid and lamb are consecrated to take their place by the head of the Jo Inomo, as there must be no interregnum, no period in which there is not a sacred goat or ram. They are consecrated in the usual manner, the performer spitting on his hands and rubbing the animals on their shoulders, sides and stomachs, and pouring water on their heads with both hands, praying at the same time, "May the virtue of this kid and the virtue of this lamb secure us good rains, etc." They must, of course, be brown, or (among the Jo Moita) black. They are kept by the Inomo clan until they grow up

¹ They are not killed if at the time the rains are good, but are kept till next year or for a drought.

² Probably *owilakot*, *kwong* and *orvo*, but it is uncertain.

³ *Won-kot* means literally "Owning the rain," or Rain-maker. The title is applied to various old men, who appear, however, to have no peculiar authority either over the elements or at the festival. Its application is obscure, and it is probable that originally the *Won-kot* was a person of great power, as among the Madi, but gradually lost his rights and privileges by a process of democratization. The last *Won-kot* of any general power was one Olet of Lira, who died about two years ago, and had a great reputation as a maker of rain independent of these rain ceremonies.

and are required at the next festival, but should a dry spell come unseasonably before the next year they may be sacrificed in the village courtyard, the spears having all been gathered there. Water is thrown up as before and the intestinal dung is smeared on the spears. The killing is not ceremonial, and therefore the skin is undamaged and belongs to the *Won-kot*, and the meat is eaten by all. Others are, of course, consecrated to take their place. Should the clan Jo Inomo not possess a goat of the right colour, they may take a suitable goat from anyone, and the owner would not be able to object: and the consecrated goats are in no way molested if they stray into and spoil crops, and the Jo Inomo are not responsible for damages.

The following are some of the songs sung at the rain festivals, but only *jobi* songs are sung in *jobi* years, and so on.¹

¹ It has been suggested above that the rain ceremonies are of extraneous origin, and among the many indications that this is so, the songs sung at the festival afford a most significant proof. Further than this, however, it is probable that the *aworon* festival is also a comparatively late introduction, as a similar but largely elaborated ceremony holds among the neighbouring Hamitic tribes, viz., the Karamojo, Iteso and Akum (or as they are more generally and inaccurately known, the Kumam). In fact, one old man went so far as to say that the clan Jo Alaki were the first to introduce the ceremony from the Akum. There are numerous points of divergence, but among these Hamitic tribes there is a quinquennial ceremony, as among the Lango, who are alone among Nilotic tribes in holding any festival similar to the *aworon*; but instead of four animal groups there are eight, and the groups are named not only after animals, but also after inanimate substances, e.g., *esingu*, sand. Further, the initiates are always young lads, and the ceremony would appear to be more truly one of initiation to puberty with less emphasis on rain, and the initiates permanently take the name of their groups as their own personal grade names. The eight groups are classed in two divisions of four groups each, and during the *aworon* there is a state of war between the two divisions, resulting in numerous deaths, though (as with the Lango) only buffalo hide whips may be used. This state of war is entirely outside the general truce. In these two divisions we may trace the very vague combination of the *jobi* with the *lyech* and the *amorung* with the *kwaich*, which would appear to have lost its original *raison d'être*. Without proceeding to details, enough has been said to show that the festivals are similar, and taking into consideration the fact that the ceremony is unique among Nilotic tribes, and is both widespread and more developed among Hamitics, it is reasonable to suppose that the former learnt it, with the consequent rain festival, from their neighbours.

This supposition is supported again by the fact that the rain spears were originally made by the Jo Abur, a Hamitic tribe closely akin to the Karamojo; and by the fact that the Lango of Orumo still fetch the sacred water from the Jo Abur.

The Hamitic tribes being to the east and south, it is natural that the Lango to the north, the Jo Aber, who come under different influences, should not participate either in the *aworon* or in the usual rain festivals, and it is extremely noticeable that the farther south one travels the more established does one find the custom.

The Iteso and Karamojo in times of drought have, in addition, recourse to human sacrifice, but this at no time found favour with the Lango, except the Jo Aber, who are largely influenced by a Nilotic tribe, the Acholi, to whom rather than to the Iteso may be traced the habit of killing an old man in times of prolonged drought. The Acholi have been quite unaffected by these Hamitic customs, and it is probable that the rite of human sacrifice came down to them from the Madi, by whom an unsuccessful rain-maker is generally done to death.

To revert now to the songs given below, the last chain in the evidence is completed. While the chorus is as a rule easy to understand, the recitative more often than not has little or no meaning.

Amorung songs :—

*Ngor oling alinga,
Ngor ochung i ngony yago,
Oling ni ti, ngor,
A a e o ooo.
Ngor oling alinga,
Ngor obed' i ngony yat,
Oling ni ti, ngor,
A a e o ooo.*

Apak *Ngor ka riki duny' apua kemo kidi. Awapo Nyara¹ ka riki tur ka ekesan ebyong. Ngor oduny' apua kar' ngo? Ngor oling i ngony ebyong ka etiron, a a, ngor ka duny' apua ka alirok. Ngor kaliro ka duny' apua. Koko ngor ewapo kidi ka ebyong, oduny' apua.*

The rhinoceros is at silent rest,
The rhinoceros stands at the foot of the kigelia,
He is utterly silent, the rhinoceros,
A a e o ooo.
The rhinoceros is at silent rest,
The rhinoceros sits at the foot of the tree,
He is utterly silent, the rhinoceros,
A a e o ooo.

Recitative. The rhinoceros where it throws up the dust looks towards the hill. I follow Nyara where it was on the other side where the young man was, the acacia tree. When does the rhinoceros throw up the dust? The rhinoceros is silent at the foot of the acacia with horn

This is largely due to the fact that a great proportion of the words are Hamitic, and are evidently handed down as part of the ancient formula. Much of the formulæ is not intelligible even to the old men, and I have little doubt that as they extemporise the recitative they introduce isolated words and fragments of half-remembered formulæ, without worrying a great deal about the meaning which they intend to convey, beyond a general sense which is already familiar to all the participants.

The very names of the animal groups indicate a Hamitic origin :—e.g., *amorung* = Lango *amoching* (called also *ngor* in the first song), and for *kwaich* the Hamitic word *erisa* is sometimes heard.

Not only are Hamitic words and obsolete forms retained, but so far do they go that the letter *s*, which does not exist in Lango proper, is pronounced in words which are of Hamitic origin, though the sound approximates more to *chs*. The letter *h* also, though not employed in Lango, appears in these songs.

To take one song only, the last of the *jobi* group, the following words are of Hamitic origin, and can all be found in everyday use among the Iteso, Karamojo or Turkana, though often with slight variations of form or meaning :—*Abong, aryong* (= Lango *eryonget*), *atur, akochewan* (also *akosiwan*, vide Ateso *ekosobwan*, and Karamojo *ekosogwan*), *awong, ekesan, ebelebele, adwaran*. And nearly all the names of animals which appear in the various songs are Hamitic names instead of the usual Lango.

¹ Nyara, the name of a hill to the south-east in Teso country.

at the charge, *a a*, the rhinoceros throws up the dust steadfastly.
The rhinoceros standing still throws up the dust. The cry of the
rhinoceros follows the hill where the acacia is, and he throws up the dust.

Ebu akomol, a e a,

Ebu akomol, kar' iyenyo ngo kan ?

Ebu akomol, a a a,

Ebu akomol, kar' iyenyo ngo kan ?

Apak^{*} *Ebu papo pa Alubayo, ewoto i wor, papo pa Alubayo.*¹

O dappled hyæna, *a e a*,

O dappled hyæna, what seek you here ?

O dappled hyæna, *a a a*,

O dappled hyæna, what seek you here ?

(Recitative.) The hyæna father of Alubayo (the "roadfollower") travels
by night, father of Alubayo.

In iyenyo ngor maduny' apua ?

In iyenyo ngor maduny' apua ?

Apak *Ngor keken in iyenyo, ngor maduny' apua.*

Searchest thou for the rhinoceros that throws up the dust ?

Searchest thou for the rhinoceros that throws up the dust ?

Recitative. For the rhinoceros alone dost thou search that throws up the
dust.

Lyeck songs :—

*Alira*² *moro yam' Oluju* :³

Piny oru, o o.

Dong kuk jo Awalu, gin ene.

E e, Alira moro yam' Oluju :

Piny oru, a a.

*Wun, jo Awalu,*⁴ *gin ene.*

Apak *Onyang oruk' atil oporo kar' ekesan.*

Some Alira conspire with Oluju :

The dawn breaks, *o o*.

¹ *Ebu* (*vide* Ateso and Karamojo) = Lango *odyek*, hyæna. The meaning is not clear, but perhaps *Alubayo* is by assonance intended to indicate *alop*, the animal associated with the *amorung* group.

² The Alira are a section of the Acholi tribe.

³ In 1911 Oluju, a Lango Chief (since dead), obtained assistance from the Alira to make war on Ogeta's people at Abako.

⁴ Ogeta's people are called Jo Awalu in the song with reference to the marshy nature of their country, the water bubbling up (*walo*) in numerous little springs.

Then warn the men of Awalu, "Here they are."

E e, Some Alira conspire with Oluju :

The dawn breaks, *a a*.

You, men of Awalu, here they are.

Recitative. The reedbuck calls to the cob, he is like unto a young man.

Chokeunu !

Onyang ochung wi biye,

Ochung ni pim.

E e, *onyang ochung wi biye,*

A a, *wi biye, i a a a,*

Chokeunu !

Onyang ochung wi biye,

Ochung ni kang.

Apak *Onyang oruk atil kare poron ekesan poron ebelebele tur ekesan
Onyang oruk' atil poron k' adwaran. Onyang oruk' atil poron ebelebele.
ka tur ekesan. Wapo kidi ebyong, kar' iwapo kidi . . . ka iwek wapo
kidi ka tur, hai wapo kidi, wapo Nyara, kok' otemo Nyara, ee eee ee eee,
awapo Nyara.*

Gather ye together !

The reedbuck stands on the anthill,

It stands unwavering.

E e, the reedbuck stands on the anthill.

A a, on the anthill, *i a a a*,

Gather ye together !

The reedbuck stands on the anthill,

It stands motionless.

Recitative. The reedbuck calls to the cob like a young man, utterly like a young man on the far side of a valley. The reedbuck calls to the cob like an elder of the people. The reedbuck calls to the cob utterly like a young man on the other side of a valley. To follow the hill of the acacia, for thou followest the hill. . . . Shouldst thou cease following the hill to the other side, ha ! following the hill, following Nyara, the cry aims at Nyara, ee eee ee, I follow Nyara.

Eryeng aa pap' Onyeng,¹

Eryeng papo aa,

Onyeng Eryeng,

Eryeng pap' Onyeng aa,

Pap' Eryeng Onyeng.

Apak *Egero amagoro. Kok' owapo kidi, etemo Nyara. Egero amagoro.*

¹ *Eryeng* and *Onyeng* both = Lango *kul*, warthog.

Eryeng aa father of Onyeng,

Eryeng father aa,

Onyeng Eryeng,

Eryeng father of Onyeng aa,

Father of Eryeng Onyeng.

Recitative. He builds in the wilderness. The cry follows the hill, it aims at Nyara. He builds in the wilderness.

Kwaich songs :—

Achanya me Olum, erisa obuto k' achanya.

Achanya me Olum achanya.

En erisa obuto k' achanya me Olum.

Achanya, erisa obuto k' achanya.

Awot anen.

Apak *Aa, k' Olum kare edoket, Abongo, ibuto k' achanya. Achanya en.*

The banana leaves of Olum, a leopard sleeps in the banana leaves,

The banana leaves of Olum, the banana leaves.

He the leopard sleeps in the banana leaves of Olum.

The banana leaves, the leopard sleeps in the banana leaves.

Let me go to see.

Recitative. *Aa*, At Olum's, at the place of the ford, Abongo, thou sleepest in the banana leaves. The banana leaves are they.

Elwa me apel tye k' Angung,

Elwa me apel tye Angung.

Apak *Akok' elwa apel. Epwonya dyang Onango.*

The lightning-charred *elwa*¹ is at Angung,

The lightning-charred *elwa* is at Angung.

Recitative. I lament the lightning-charred *elwa*. Epwonya the cow of Onango.

Kworo mam.

Ogwang owoto dyewor, a,

Ia, ogwang, a,

Ogwang owoto dyewor, a,

Ia, ogwang, a.

Apak *Kwor' omako gwen. Ogwang pa Epwonyaokwayo gwen. Ogwang owoto dyewor kare kworo kare kwor' emunyuru, kar' ogwang omako gwen kar' kadi gwok gu. Ogwang emunyuru kar' ogwang kworo. Ka eeee eee kare dyang pa Onangepwonya. Kare ogwang owoto dyewor kare kworo kar' ogwang, kar' oleko dyang Onango, eee eee eee.*

¹ *Elwa* is the tree *Chlorophora excelsa*, Bth.

The cervical is not.

The meercat travels by night, *a*,

Ia, the meercat, *a*,

The meercat travels by night, *a*,

Ia, the meercat, *a*.

Recitative. The cervical takes the chicken. The meercat of Epwonya begs a chicken. The meercat goes by night, be it the cervical or the meercat, for the meercat takes the chicken, ay even the dog also. Be it the meercat or the cervical. For *eeee eee* even unto the cow of Onangepwonya. For the meercat travels by night, be it the cervical or the meercat, for that it drives off the cow of Onango, *eee eee eee*.

Jobi songs :—

Jobi owot' ayeyo wiye,

Otyer tye i ite, otyer tye i ite,

*Okem Amongolem.*¹

Jobi owot' ayeyo wiye,

Otyer tye i ite, otyer tye i ite,

Okem Amongolem.

Oluk omyere jobi bala dok Amongolem.

Jobi owot' ayeyo wiye,

Otyer tye i ite, otyer tye i ite,

*Alochit Apeta.*²

Jobi owot' ayeyo wiye,

Okem Amongolem.

The buffalo goes with head on high,

The bird is on his ear, the bird is on his ear,

He faces the Amongolem.

The buffalo goes with head on high,

The bird is on his ear, the bird is on his ear,

He faces the Amongolem.

Oluk is a match for the buffalo as at the mouth of the Amongolem.

The buffalo goes with head on high,

The bird is on his ear, the bird is on his ear.

Alochit of the spreading horns.

The buffalo goes with head on high,

He faces the Amongolem.

¹ Amongolem, a river to the south-east near Nyara Hill.

² Alohit is another name for the man Oluk, the hero of a celebrated buffalo hunt. A (i.e., of the spreading horns) is the name which he took to commemorate that event.

*Ha ! Yeyeyeye, bilo jobi,
Bilo kok' i kulu, bilo jobi.*

*Ha ! Yaaa,
Bilo kok' Ayago, bilo jobi.*

Ha ! Yeyeyeye !

Apak *Ngora Ajwang, Ngweny Adeker,¹ ekesan k' adwaran ebelebele ka tur.*

*Ha ! Yeyeyeye, the flute of the buffalo,
The flute sounds in the river, the flute of the buffalo.*

*Ha ! Yaaa,
The flute sounds in the Ayago,² the flute of the buffalo.*

Ha ! Yeyeyeye.

*Recitative. Ngora son of Ajwang, Ngweny son of Adeker, young man
and elder of the people, utterly on the far side.*

*Mony Ngora madupo kuluno,
Aimai !*

*Mony Ngora madupo kuluno,
Aimai !*

*The host of Ngora skirts this river,
Ah ! Woe is me !*

*The host of Ngora skirts this river,
Ah ! Woe is me !*

*Kiyakiya, a aia,
Dyangni yam tye kwene mumoyo piny ?
Tye Alabatu.³*

*Kiyakiya, a aia,
Dyangni muneko piny yam tye kwene ?
Tye Alabatu.*

*Kiyakiya, a aia,
Dyangni yam tye kwene mumoyo pi ?
Tye Alabatu.*

Apak *Kok' Achuralem ribiribi ka tur.*

*O glistening whiteness ! a aia !
Where was thy cow, thy cow that swallows the earth ?
It is at Alabatu.*

¹ Ajwang is the mother of Ngora, and Adeker the father of Ngweny, Ngora's maternal uncle. The Ngora mentioned in this and subsequent songs was a great general who led three successful expeditions against the Madi about sixty years ago.

² Ayago, a river flowing into the Moroto or Aswa.

³ Alabatu, a large open plain near Nimule. This refers to a large cow paid as ransom by a Lango prisoner to the Madi on one of their numerous expeditions.

O glistening whiteness ! *a aia !*

Where was thy cow that destroys the earth ?

It is at Alabatu.

O glistening whiteness ! *a aia !*

Where was thy cow, thy cow that swallows the waters ?

It is at Alabatu.

Recitative. Cry to Achuralem, cry swiftly to the other side.

Gin 'a job' oneno mam oweko :

Dyang tye loka.

Apak *Otyer ka rupe, otyer ka chupe.*

What the buffalo sees he leaves not :

The cattle are across the river.

Recitative. The bird whispers it to him, the bird advises him.

Ngora owot' ayeyo wiye.

Kon' ochal nadi ? Ochal nadi ?

A a, amagoro ka mo,

A, ochal nadi ? Ochal nadi ?

Ngora owot' ayeyo wiye.

Kon' ochal nadi ? Ochal nadi ?

A a, amagoro ka mo,

A, ochal nadi ? Ochal nadi ?

E e, jobi owot' abong k' abong.

Apak *Aaa jobi owot' awi k' awi, owot' aryong aryong. Jobi owoto ki wiye mere atur k' atur, Apeta k' Alochit. Kara jobi owot' awong k' awong, odacho choto i wiye . . . oweko kare akochewan. Aa jobi owoto k' awong awi k' awi k' aryong, odacho choto wiye. Ekesan, ha a ! Ekesan, ha a ! Owoto Amongolem, kare otyer tye i ite, ka rik' atur k' atur. Odacho choto i ite, jobi owoto ki wiye mere ki awong, abong k' abong. Akosiwan, otyer tye i ite. Ekesan, ye eee ! Ewapo kidi, kok' otemo Nyara. Jobi owoto kidi ki wiy' awi ebelebele tur k' ekesan k' adwaran. Jobi owoto kidi ki wiy' awi ebelebele tur k' ekesan k' adwaran, ebelebele tur k' ekesan k' adwaran, eee eee !*

Ngora goes with his head on high.

Now what is he like ? What is he like ?

A a, the wilderness where lies the enemy,

A, what is he like ? What is he like ?

Ngora goes with his head on high.

Now what is he like ? What is he like ?

A a, the wilderness where lies the enemy,

A, what is he like ? What is he like ?

E e, the buffalo travels in herds.

Recitative. *Aaa* the buffalo goes with his head on high, he goes in great companies. The buffalo goes with his head swinging this way and that, O Alohit of the spreading horns. For the buffalo goes multitude on multitude, he scatters mud on his brow . . . he leaves his haunts, the buffalo. *A a*, the buffalo goes in multitudes with his head on high in great companies, he scatters mud on his brow. Young man, *ha a* ! Young man, *ha a* ! He goes to the Amongolem, and his bird is on his ear, as he sways his head from side to side. He scatters mud on his ears, the buffalo goes with his head on high in multitudes, in herds. The buffalo, his bird is on his ear. Young man, *ye eee* ! He follows the hill, the cry aims towards Nyara. The buffalo goes to the hill with his head on high utterly to the other side with the young man and the elder of the people. The buffalo goes to the hill with his head on high utterly to the other side with the young man and the elder of the people, utterly to the other side with the young man and the elder of the people, *eee eee* !

Should the rains fail in spite of these ceremonies, recourse is made to one Angwech, an aged woman who lives at Abako and holds a position unique among the Lango. She has only attained her present eminence within the last five years, but is now known and acknowledged by the whole tribe, even in the most remote areas.¹ She is not a rain-maker, and professes to have no power over the elements, but is a priestess of Atida, called by all except the very few initiated *Min Jok*, or the Mother of God. As the priestess, she has the power of divination and prophecy, and her advice is sought—with gifts—on a diversity of matters, including rain. During the prolonged drought of 1918² she was approached by embassies laden with gifts from all parts of the District, and it is a remarkable fact (call it coincidence or what you will) that in nearly all cases her assistance was successful. Nor is she a mere charlatan, as is shown

¹ This is the more remarkable when it is remembered that since the disruption of the Shilluk kingdom the Lango have had no paramount Chief, but have been divided under the authority of local war-leaders.

² The reason given for the 1918 drought is not without interest. To the north-east of the Lango is the river Moroto, and in March of this year a man fell from the sky near this river, bringing with him a bag of money, a leg of a cow and four soldiers. He is black, and speaks Lango without any foreign accent, and states that though he comes from a place where there are cattle innumerable and wealth unspendable he will consent to live on the earth. Orweny of Batta, a powerful wizard, asked him about the drought, as he would be sure to have the latest information, and the heavenly visitant informed him that it was due to the fact that a certain *jok* (God) had committed adultery with the wife of another *jok* and refused to pay compensation, and that, therefore, in his wrath, the latter had stopped the rain. Orweny by his enchantments secured the arrest of the former and the payment of compensation towards the end of May. Hence the June rains.

by her reception of an embassy from Kaduku, whose gifts were unusually rich and numerous. "No," she said in reply, "I will not give you the sacred water, nor will I take your gifts, as it is not I who have helped you. Before you reached me it rained at Kaduku while you were yet on the way. Return with your gifts: it has rained in abundance." She lives, it should be added, about fifty miles from Kaduku.

On the deputation of old men reaching her, Angwech gives them such advice as she considers will avail them, including directions as to the sacrifice of chickens and goats and the method of their disposal, and takes them to the sacred pool, called *Ot Jok*, or House of God. Here the old men besmear themselves with mud from the pool and throw mud and water into the air. They pray for success to crown their efforts, dancing the *awala*, and are finally presented by Angwech with some sacred medicated water from the pool, which they take home in a calabash.¹ On arriving home, they assemble the countryside at the village of the *Won-Kot*, and having carried out the instructions of Angwech (which vary considerably) asperse the assembled multitude with the sacred water, praying for rain.

Should the drought continue in spite of this, it is suspected that one or more of the old men have maliciously concealed the rain, and endeavours are made to find the culprit. The old men first search among themselves and, should they find him, beat him severely, make him undo his magic and pay a fine of four goats and four sheep, which they eat themselves. If they are unable to find the culprit, all the old men are mercilessly beaten by the *awobi*, and are mulcted of innumerable goats, in the hope that they will be induced to deliver up the culprits, whom they are now suspected of shielding.

Rain may be hidden or "tied up" in various ways. (a) Mud is taken from a pool of rainwater, rolled into a ball, and hidden in a house, granary, or tree. (b) The skulls of the animals killed at the rain festival are not disposed of properly, or are subsequently stolen. In one case they were stolen and ground to dust with fatal effects on the rain.

In addition to the rain songs given above there are two more songs connected with the rain: *wer mach* (the fire song), which is sung after lightning has struck a house or property:—

*Opet awanga, yaa!*²

Opet awanga, aaa!

Awang awang awang, haaaa!

Anok anok anat, aaa!

¹ In the case of the Lango of Orumo, there is a special rain road only used during a prolonged drought in order to obtain sacred water from the Jo Abur, some three days' march. It had not been used for over twenty years till 1918, and was quite overgrown, but its course was well known.

² The sense of this song is not clear, beyond the fact that it refers to a spreading conflagration.

Awang awang awang, haaaa !

Anok anok anat, aaa !

Apak *Akok' awanga kare, a yeyeye aa ! Awang i tata ka tur kare. Haya !*

awang i tata ka tur kare. Anok anat, ha, anok anat, awang awanga.

Ha aa, awang awanga do, aaa, awanga, yeee, tur ekesan, yeee, awanga, yeyeye, awanga, yeeee, awanga, yee, ebelebele ekesan, ee eee !

and *wer bonyo*, the locust song. This is either a *jobi* or a *kwaich* song, but as its singing is forbidden, neither group admits its responsibility. Should it be sung, the locusts would come with the rains, and it is consequently impossible to obtain the words. It would only be sung with malicious intent, and in this connection it is of interest to note that the clan Jo Atengoro is especially entrusted with the task of repelling an invasion of locusts. They catch one and enclose it alive in a small newly-made earthen pot, the mouth of which is then sealed over with clay. It is put on the ground in the direction of the advancing swarm, and an axe-head is stuck in the ground beside it, and is there consecrated with the usual ceremonies. The axe-head is never touched again nor taken back to the village, or it would bring back the locusts.

There remains the practice of the Jo Aber, which is much less complex, and is frequently much truncated : there is less unity observable also, and often the ceremonies are conducted clan by clan.

The assembly, having sacrificed a black goat, first proceeds in procession to a spring, which has traditionally been the home of the rain, and there they catch a frog, which is said to be the *Won-kot*, or the Owner of the rain, in proof whereof the rains break when the frogs croak. They smear the frog with mud and rub mud on their own breasts and foreheads. Water is thrown up from the well into the air both with the hands and with the thistle called *ekwanga*, while the old men pray, "May rain fall as this water falls : may it fall on our grain and fructify it exceedingly, bringing joy and increase to our wives and children."

The procession then passes by a prescribed route from tree to tree and pool to pool, the men and women keeping apart. For the most part the men are silent, but the women sing continuously (not the rain songs above, but songs of everyday life, including some songs usually reserved for the ceremonies attending the birth of twins), and dance the *abalachela*, a dance similar to the *awala* but peculiar to this ceremony. They dance it under trees, in villages and by pools, and as they walk in procession, contrive to retain the steps of the dance. Both men and women are garlanded and wreathed with the convolvulus, *bomo*. The men carry one spear each.

At each pool water is sprinkled and mud is rubbed on the body, both by men and women, and the following procedure takes place at each of the trees (always a fig or a *kigelia*) at which the procession stops. The tree is rushed with much noise and shouting to drive out the rain which has taken shelter in its trunk, which is then tied round with ropes of plaited grass in order to restrain the wind and to cause it to be at

peace. The women sing at a distance from the tree, while the men in a deep and solemn voice perform the *agat* as given above.

Numerous trees and pools are so visited, and the ceremony ends without further variation, except at Lira, where, after all the trees and pools have been visited, the procession reaches a small gneiss outcrop, where it rests while the men again perform the *agat*. Everyone then gathers up all loose pebbles and covers them with grass and earth, as it is thought that should they be left unconcealed the rain would be frightened away.

The women now disperse, but the men proceed to Ngeta hill, each armed with his one spear, and on arriving there form a semicircle facing it, and as they dance the *awala*, threaten the hill with their spears, singing at the same time :—

Kot, chwe : nen tong : kot, chwe ki anywal anywala.

Rain, fall : behold the spear : rain, fall with fruitfulness.

This ceremony is further unique among rain ceremonies in being accompanied by the long drum, *atimu*, which is played by the *Won-kot*.

In case of failure the Jo Aber also obtain advice and water from Angwech, and alone of all the Lango select for death one of the old men, should they persist in withholding the rain.

ON THE OCCURRENCE OF HUMANLY-FASHIONED FLINTS, ETC., IN THE "MIDDLE GLACIAL" GRAVEL AT IPSWICH, SUFFOLK.

[WITH PLATES III AND IV.]

By J. REID MOIR.

DURING the past twelve years the author of this communication has made a close study of the deposits of gravel known as "Middle Glacial," which generally underlie the Chalky Boulder Clay, and which are exposed in various pits in the neighbourhood of Ipswich, Suffolk. These researches have shown clearly that in this gravel humanly-fashioned flints occur,¹ and that a certain limited number of these approximate very closely in their forms to the Early-Palæolithic-Chellian specimens. It is the purpose of this paper to figure and describe accurately some of the more important implements that have been recovered, and to establish the fact of their occurrence in a definite glacial deposit. In the compiling of this communication the author feels himself to be under a great debt of gratitude to Sir E. Ray Lankester, K.C.B., F.R.S., The Director, H.M. Geological Survey, the late Dr. W. Allen Sturge, Dr. A. Smith Woodward, F.R.S., Mr. R. Bullen Newton, F.G.S., Mr. F. W. Harmer, F.G.S., Dr. Charles Andrews, F.R.S., Mr. W. Whitaker, F.R.S., Professor J. E. Marr, F.R.S., Dr. A. B. Rendle, F.R.S., Mr. Henry Ogle, and Mr. E. T. Lingwood. The latter gentleman has been so good as to draw the various specimens illustrated, and the author is confident that both Mr. Lingwood's line drawings, and the beautiful coloured plate, which is a reproduction of some of his work, will meet with general approval.

A DESCRIPTION OF THE SUB-CHALKY BOULDER CLAY "MIDDLE GLACIAL" GRAVEL.

The glacial gravel underlying the Chalky Boulder Clay in the Ipswich district is without doubt a plateau deposit, and is clearly, therefore, more ancient than the terrace-gravels of the River Gipping. To the east of Ipswich the glacial gravel is often not covered by any other deposit, but to the north-west and south of the town the gravel is seen in places to underlie the Chalky Boulder Clay, and is evidently to be referred to a time earlier than that in which the latter was laid down. The gravel contains a large number of derived rocks, which, occasionally towards the base of the deposit, are of considerable size. In the *Memoirs of the Geological Survey*, "the Geology Around Ipswich, Hadleigh and Felixstowe," p. 72, it is stated that

¹ A preliminary account of some of these specimens has already appeared. See Moir, *Proc. Prehist. Soc. East Anglia*, Vol. i, Part iii, pp. 307-319.

the sub-Chalky Boulder Clay gravel is "the Middle Glacial" of Wood and Harmer. But, in view of the fact that the Lower Glacial deposits of Norfolk are apparently not present in Suffolk except in the extreme north of the county (*see Boswell, Proc. Geol. Assoc.*, Vol. xxv, 1914, Part 3, Plate 24), it would appear to be somewhat difficult to state with certainty that the sub-Chalky Boulder Clay Gravel of the Ipswich District is of true "Middle Glacial" age. Further researches, however, by geologists will no doubt settle this question one way or the other. The gravel under discussion generally rests upon the Pliocene Red Crag, and is clearly later in age than this deposit. The author has found humanly-fashioned flints in the Middle Glacial Gravel exposed in Coe's pit, Bramford, and in the two large pits sunk into the plateau opposite Foxhall Hall. The former place lies about two miles north-westward of Ipswich, while the latter is situated about three and a half miles to the east of the town. But the pit which he has visited most frequently, and which in consequence has yielded him the largest number of specimens, is that in the occupation of Messrs. A. Bolton & Co., Ltd. (late Bolton & Laughlin), which lies to the north of the Trackway joining the Henley and Norwich Roads. (*See Ordnance Survey Map, Suffolk (East), Sheet LXXV, 7. The pit is shown in Field 441.*) This excavation shows a typical section of the Middle Glacial Gravel resting upon stoneless, yellow sand (? decalcified Red Crag) and surmounted by a series of deposits (sand, loam, clay with lumps of striated chalk, etc.), which is recognised by geologists as of glacial origin, and the lowermost members of which were, in all probability, laid down during what is known as the Chalky Boulder Clay glaciation (Pl. III). To avoid confusion, the author has decided to describe only the flint implements, etc., found in the gravel exposed in Messrs. Bolton & Co.'s pit and to deal with the specimens found in the two other localities mentioned on some future occasion. The pit under discussion has from time to time been visited by geologists, and Mr. W. Whitaker, F.R.S., who knows this particular pit and the Ipswich district intimately, has very kindly given the author, in a letter, the following opinion: "I have no doubt about that gravel in Bolton & Laughlin's pit. It goes under the Boulder Clay, and so it must be of glacial age. Also it goes over the Crag, and that limits the possibility of downward extension. Personally I don't use the term Middle Glacial, I am content with Glacial. But the gravel is what is called Middle Glacial." The top of the glacial gravel in Messrs. Bolton & Co.'s pit reaches a height of about 120 O.D., and the deposit itself averages from 8 to 10 feet in thickness. It exhibits usually a well-marked stratification, sometimes highly inclined, and the layers of gravel are separated by bands of sand of a light yellowish colour. The gravel contains fragments, together with more or less complete examples, of shells. The best preserved of these have been examined by Mr. F. W. Harmer, F.G.S., who states, "Your shells seem to be with one exception *Purpura lapillus*, a common recent British and Crag species, having a wide range both in time and space. The other is an oyster, but too much worn to be specifically identified."

Mr. Bullen Newton also kindly examined some of the shells recovered, and identified *Ostrea deltoidea*, broad and narrow forms of *Gryphosa dilatata* (species ranging from Corallian to Kimmeridgian), rolled *Gryphæas* referable to the Mesozoic, one rolled tooth of *Otodus obliquus*, and rolled teeth of sharks from the Crag. Pieces of lignite occur in the gravel, but Dr. A. B. Rendle, F.R.S., who has examined a specimen, states that the wood has become so thoroughly carbonised and compressed as to leave no trace of its original structure. He considers that a bit of oak might take on the appearance of the sample submitted to him, but, in the absence of any structure, a certain diagnosis is impossible. The bones in the Middle Glacial Gravel are very rare and highly "mineralised," and when found occur at the base of the deposit. One or two specimens were sent for identification to the British Museum (Natural History), and Dr. Charles Andrews, F.R.S., reports that possibly Cetacean and Proboscidean remains are represented. The gravel contains large numbers of quartz and quartzite pebbles, and an appreciable quantity of flints exhibiting the peculiar crackling and "hackly" fracture produced by the action of fire. In places the deposit shows bands of smallish stones coated with a black material (? manganese) which lack the usual sandy matrix. The gravel is sometimes compacted and ferruginous at its base, but the great mass of the deposit does not contain any binding material, and is, in consequence, very friable.

The flints in the Middle Glacial Gravel are seldom of large size and possess usually a cortex with a curious uneven surface which the author has also noticed upon the unflaked portions of Chellian-Palæolithic implements from the Thames Valley, and now in the Sturge collection at Icklingham Hall, Suffolk.¹ Heavily rolled and battered flints are a rarity in the gravel under discussion, though some of them exhibit, on their flat, fractured surfaces, clearly defined and weathered-out striae. The upper portion of the deposit often presents a "tumbled" appearance, and some of the stones are to be seen standing on end in the clayey matrix which is here present. As will have been noticed, it is Mr. Whitaker's opinion that the gravel exposed in Messrs. Bolton & Co.'s pit is the same as that usually described as "Middle Glacial," and in this opinion the author concurs. The origin of, and the manner in which the gravel was laid down are somewhat problematical, but it would appear, in view of the flint implements, burnt flints, etc., presently to be described, which are scattered promiscuously through the deposit, to be reasonable to regard it as representing in part a broken-up land surface re-deposited by water resulting from melting ice. And from the small number of battered stones occurring in the gravel, it would seem that this water was not of a very turbulent nature. This view is supported further by the presence, already noted, of almost complete, yet fragile, examples of the shells of *Purpura lapillus*. The Middle Glacial Gravel sometimes rests unevenly upon the underlying Crag sand, which was, no doubt, greatly denuded during the laying down of the former deposit.

¹ This collection is now transferred to the British Museum, Bloomsbury.

A sample of the sand taken from the Middle Glacial deposit was forwarded to the Director H.M. Geological Survey, and examined by Dr. Thomas, who reported as follows :—

"The sand is a moderately fine grained running deposit, somewhat unevenly graded and lightly iron stained. The grains range from angular to sub-rounded, the quantity of heavy minerals present is small, and their nature not indicative of any special deposit known to me. The character of the sand appears to me as that of a fluviatile deposit."

THE EVIDENCE AS TO THE PROVENANCE OF THE MIDDLE GLACIAL FLINT IMPLEMENTS.

During the period in which the author has had the Middle Glacial Gravel in Messrs. Bolton & Co.'s pit under observation, he has made himself intimately familiar with the peculiar glaze¹ and coloration of the specimens occurring in this deposit, which peculiarities serve to distinguish them from the flints of any other horizon known to him in the Ipswich district. With a view of giving the reader some idea of the actual appearance of the Middle Glacial specimens, a series of coloured drawings has been prepared by Mr. E. T. Lingwood, and is published as a plate with this paper (Pl. IV). But however excellent drawings may be, and Mr. Lingwood's certainly deserve this designation, it is not possible, by such means, to convey the same impression to the eye and mind as is produced when the actual specimens are handled. It is hoped, therefore, that archæologists will visit the British Museum, Bloomsbury, or the Museum at Ipswich, and examine the collections of Middle Glacial implements which are there exhibited. It may, however, be regarded as a fact that these flints possess a certain glaze and coloration which are quite distinctive. Further, the Middle Glacial implements are usually small, and their cortex generally exhibits a peculiarly uneven surface, to which attention has already been drawn. The only other flint-bearing deposits exposed in Messrs. Bolton & Co.'s pit are the Glacial Clay and surface material (which overlie the Middle Glacial Gravel), and it would be difficult to find any series of flints more different from the Middle Glacial specimens than those occurring in these upper beds. In colour, glaze, cortex, general size, and form they are as divergent as possible, and it will be realized that, apart from any other evidence, the flint implements themselves bear witness to their provenance in no uncertain manner. But to this evidence must be added that of the author, who has found a large number of the specimens *in situ* in the gravel. Other specimens have been found by him on or in the talus against the gravel face, on heaps of screened material in the pit, while the remainder have been preserved and given to him by the workmen, and found by them when excavating the Middle Glacial material. Thus it is

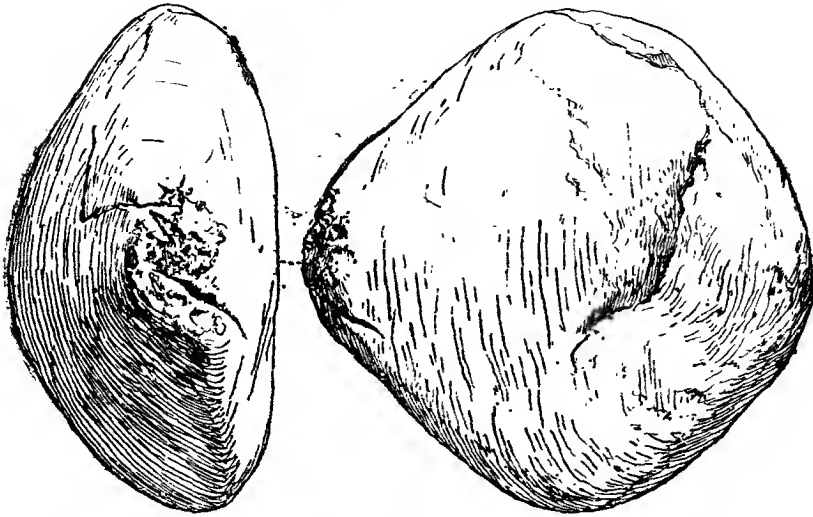
¹ The term "glaze" is used to denote the naturally-produced, bright, smooth surface exhibited by many ancient flint implements. The cause or causes giving rise to such surfaces are at present unknown.

clear that the humanly-fashioned flints, etc., now to be described, were derived without doubt from the "Middle Glacial" gravel exposed in Messrs. Bolton & Co.'s pit.

A DESCRIPTION OF THE MIDDLE GLACIAL FLINT IMPLEMENTS.

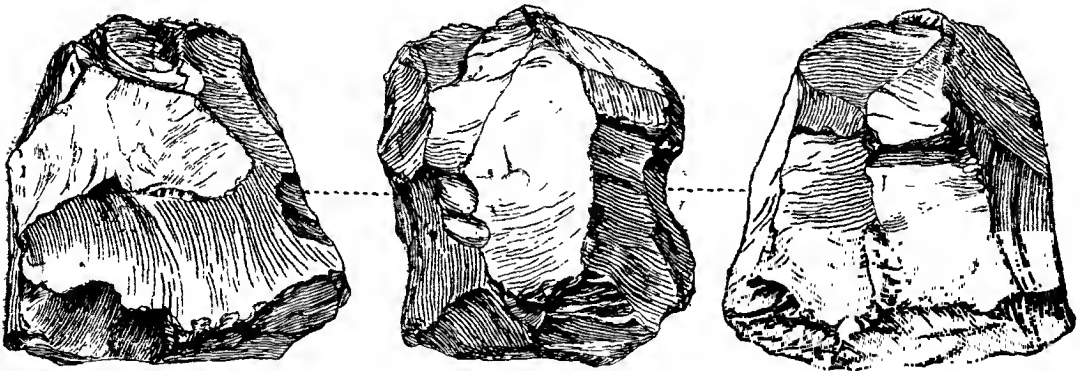
When a large series of Middle Glacial flint implements, such as the author has now been able to get together, is examined, it is at once observable that the specimens forming the series exhibit markedly different colorations. Some are black and unchanged, while others are blue, yellowish-brown, ochreous and grey. But in the present state of our knowledge it would be unwise to assume that these differing colours indicate that the flints exhibiting them may be referred to different periods prior to the laying down of the Middle Glacial gravel. When, however, a flint has been flaked during one period and has assumed a certain coloration, and then at a later period has been refaked and the newer flake-scars exhibit a totally different coloration, it is possible to say with certainty that two periods are represented. But it is necessary to see if the "newer" flaking really cuts into the older, and that the differing coloration is not due to a local difference in the hardness of the flint, which, as is known, may have a marked effect upon the resulting colour of the specimen (see Moir, *Science Progress*, No. 44, April, 1917, p. 602). There is no doubt that such reworked examples occur in the Middle Glacial Gravel, as the author has found specimens in this deposit in Messrs. Bolton & Co.'s pit. But the differing colours of the flake-scars which these flints show do not seem to throw much light upon the respective age of the implements now to be described. Thus, while it is felt that future discoveries will demonstrate that possibly several periods are represented by this series, yet the author considers it safer to regard such a conclusion as at present unproved. He proposes, therefore, to describe the various specimens according to their form and flaking, and to leave the question as to whether they are all of the same age or otherwise to some future occasion. As has already been mentioned, the humanly-fashioned flints are found at all depths in the Middle Glacial Gravel, and stratigraphical sequence therefore cannot be invoked as affording evidence of the differing ages of the specimens. The various relics to be described are as follows:—

Hammer Stones.—These without exception are made from quartzite pebbles; no examples in flint have been met with. A typical specimen is illustrated (Figs. 1 and 1A), and represents a fair-sized quartzite pebble exhibiting localised battering at one end; the specimen shows a few small areas of battering upon its flatter side, but otherwise the surfaces are rounded and smooth. It is of a light putty colour and exhibits one or two iron stains upon its surface. To those who are familiar with the quartzite hammer stones found in deposits of less antiquity than the Middle Glacial Gravel, it will be clear that the specimen described is quite comparable with these later examples. Nine other hammer stones of varying sizes have been recovered from the Middle Glacial Gravel in Messrs. Bolton & Co.'s pit.



FIGS. 1 AND 1A.—QUARTZITE HAMMER STONE FROM MIDDLE GLACIAL GRAVEL. $\times \frac{2}{3}$.

Cores.—Only one undoubted core or nucleus, from which flakes have been struck, has been found and it is here illustrated (Figs. 2, 3, and 4). The specimen is in flint, of a dark chestnut-brown colour, and shows a clearly defined glaze. Flakes which are referable to one period have been removed from all sides of it, and the original cortex of the flint is entirely flaked away, except at one place where there exists a patch about half an inch square. Most of the flake-scars exhibit

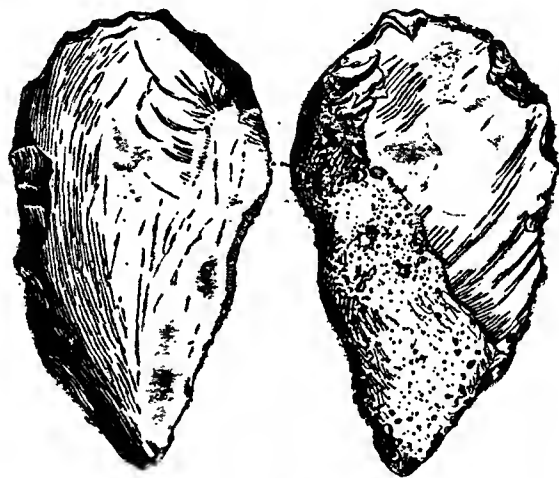


FIGS. 2-4.—THREE VIEWS OF FLINT CORE FROM MIDDLE GLACIAL GRAVEL. $\times \frac{2}{3}$.

the normal hollow or negative bulb of percussion and also well-marked fissures and conchoidal rippling. The specimen shows signs of having been subjected to rolling by water action, and exhibits a few small striæ and some incipient cones of percussion, due to the impact of other stones. This core is comparable in its general form with others which are known to occur in deposits considered to be of later date than the Middle Glacial gravel (see Sollas, *Ancient Hunters*, p. 132).

Flakes.—A large number of flakes in flint have now been recovered from the Middle Glacial Gravel in Messrs. Bolton & Co.'s pit. It will be noticed that, in each specimen figured, a well-marked striking-platform (the flat area formed so that flake-removing blows could be delivered upon it with precision) is present, together with a normally formed bulb of percussion. Further, it is clear that these specimens have all been struck from cores which had already had flakes removed from them, because the flake-scars resulting from these previously detached flakes are visible upon the side of the flint opposite to that which bears the positive cone of percussion, which exhibits one plain surface of fracture. Thus it becomes obvious that these specimens show characteristics well known to most archæologists as indicative of human workmanship.

Specimen A (Figs. 5 and 6).—This example is coloured a dark chestnut-brown and bears a well-defined glaze. It exhibits on its plain bulbar surface (Fig. 5), a

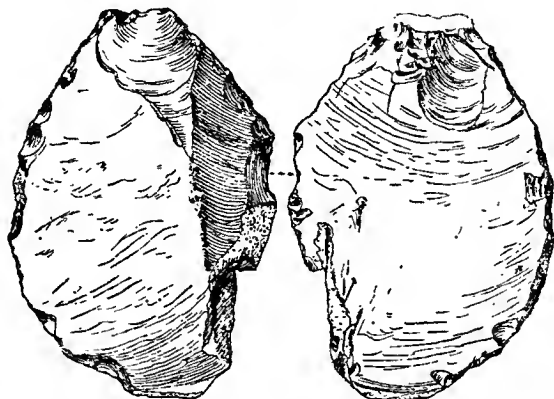


FIGS. 5 AND 6.—TWO VIEWS OF FLINT FLAKE FROM MIDDLE GLACIAL GRAVEL. $\times \frac{2}{3}$.

number of more or less parallel striæ, and some incipient cones of percussion. It possesses a flat striking-platform and clearly defined bulb of percussion and *écaillage*, and an examination of the apex of this bulb demonstrates that at least three blows were delivered upon almost the same spot before the detachment of the flake was accomplished. One of the edges of the bulbar surface bears secondary flaking, and some of this is the same age as the major fracture, while one or two flake-scars are later. The surface under examination does not exhibit any well-marked conchoidal rippling, but at the point of its final separation from the parent block of flint, the line of cleavage curves suddenly over, giving rise to a partially-developed hinge-fracture. Several prominent fissures, radiating from the point of impact, are observable upon this bulbar surface. The upper surface (Fig. 6) exhibits an oblong-shaped area of cortex and a truncated flake-scar resulting from a flake removed from the core prior to the detachment of the flake under examination.

This flake-scar shows marked conchoidal rippling, negative bulb of percussion and fissures. It is slightly striated and bears a few incipient cones of percussion. The specimen has been subjected to slight rolling by water action.

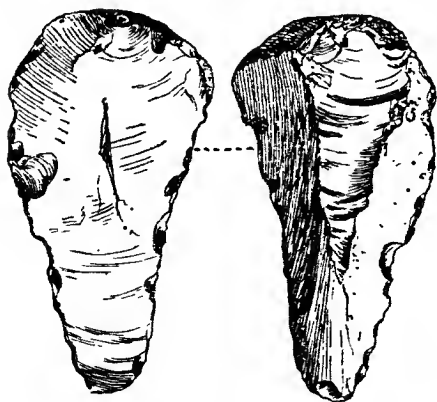
Specimen B (Figs. 7 and 8).—This specimen is glazed and of a dark chocolate-brown colour. It exhibits a flat striking-platform, bulb of percussion, *écaillage*, conchoidal rippling, fissures, and, at the point of its final separation from the parent block of flint, a partially developed hinge-fracture (Fig. 8). The upper surface (Fig. 7) carries three truncated flake-scars and one edge has been modified by secondary



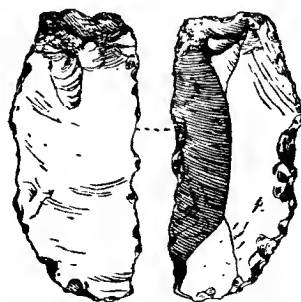
FIGS. 7 AND 8.—TWO VIEWS OF FLINT FLAKE FROM MIDDLE GLACIAL GRAVEL. $\times \frac{2}{3}$.

flaking. A small patch of cortex is observable upon the upper surface. The specimen exhibits a few small striæ and incipient cones of percussion, and appears to have been subjected to slight rolling by water action. All the flaking, with the exception of one small flake-scar, is of one period.

Specimen C (Figs. 9 and 10).—This specimen is glazed and of a brownish-grey colour. It exhibits a flat striking-platform (this area has become truncated by several small flake-scars produced after the formation of the striking-platform)

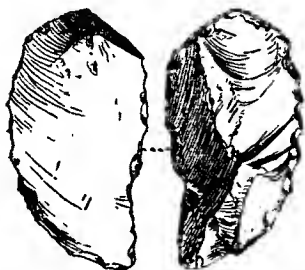


FIGS. 9 AND 10.—TWO VIEWS OF FLINT FLAKE FROM MIDDLE GLACIAL GRAVEL. $\times \frac{2}{3}$.

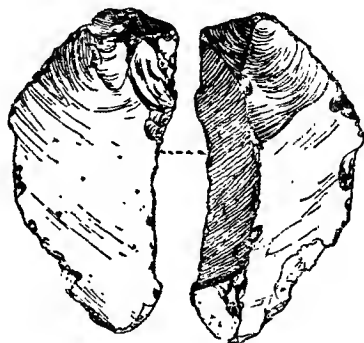


FIGS. 11 AND 12.—TWO VIEWS OF FLINT FLAKE FROM MIDDLE GLACIAL GRAVEL. $\times \frac{2}{3}$.

and a clearly defined bulb of percussion and *écaillage*. An examination of the apex of this bulb demonstrates that at least four blows were delivered upon almost the same spot before the detachment of the flake was accomplished. The bulbar surface (Fig. 9) shows conchoidal rippling and fissures. The upper surface (Fig. 10) exhibits a patch of cortex and two truncated flake-scars. One of these flake-scars bears marked conchoidal rippling, and both show clearly defined fissures. The specimen has had its edges modified by secondary flaking and a few small striæ and incipient cones of percussion are observable upon its surfaces. The flaking is all of one period, and the flint has been subjected to slight rolling by water action.



FIGS. 13 AND 14.—TWO VIEWS OF
FLINT FLAKE FROM MIDDLE
GLACIAL GRAVEL. $\times \frac{2}{3}$.



FIGS. 15 AND 16.—TWO VIEWS OF
FLINT FLAKE FROM MIDDLE
GLACIAL GRAVEL. $\times \frac{2}{3}$.

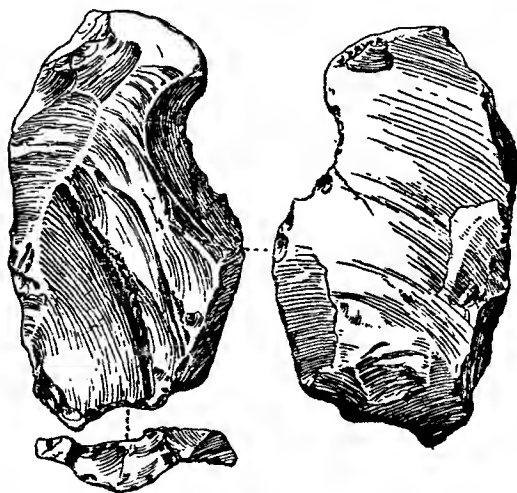
Specimen D (Figs. 11 and 12, and Pl. IV, Fig. 3).—This specimen exhibits a high glaze and is of a yellowish black colour. It shows a flat striking-platform and a clearly defined bulb of percussion and *écaillage*. The bulbar surface (Fig. 11) exhibits faint conchoidal rippling and a few small fissures. On the upper surface (Fig. 12) there are observable a small triangular-shaped patch of cortex and three truncated flake-scars which show well-marked fissures. The specimen bears on its surfaces a few small striæ and incipient cones of percussion, and its edges have been modified by secondary flaking. It has apparently been subjected to slight rolling by water action. The flaking, with the exception of one small flake-scar, is all of one period.

Specimen E (Figs. 13 and 14).—This specimen, which is only moderately glazed, presents the unchanged black colour of the original flint. It possesses a flat striking-platform and a more or less clearly defined bulb of percussion and *écaillage*; the bulbar surface (Fig. 13) exhibits faintly marked conchoidal rippling, and a number of fissures. On the upper surface (Fig. 14) there are observable a small patch of cortex, and two truncated flake-scars, which exhibit the usual conchoidal rippling and fissures. The edges of the specimen have been modified by secondary flaking, and it shows on its surfaces one or two small striæ and a few incipient cones of

percussion. The flint has apparently been subjected to slight rolling by water action, and the flaking of the specimen is all of one period.

Specimen F (Figs. 15 and 16 and Pl. IV, Fig. 1).—This specimen possesses a well-marked glaze and is of a dark chocolate-brown colour. It shows a flat striking-platform, and a clearly defined bulb of percussion and *écaillage*. The bulbar surface (Fig. 15) exhibits conchoidal rippling and a few small fissures. On the upper surface (Fig. 16) there are observable a small oblong-shaped patch of cortex and four truncated flake-scars which show either conchoidal rippling or fissures. The edges of the specimen have been somewhat modified by secondary flaking, and its surfaces carry one or two very small striæ and incipient cones of percussion. The flint is very little abraded, but it may have been subjected to some slight amount of rolling by water action. The flaking of the specimen is all of one period.

Specimen G (Figs. 17 and 18).—This specimen is of a different order from the flakes already described. These latter specimens have all been struck from cores



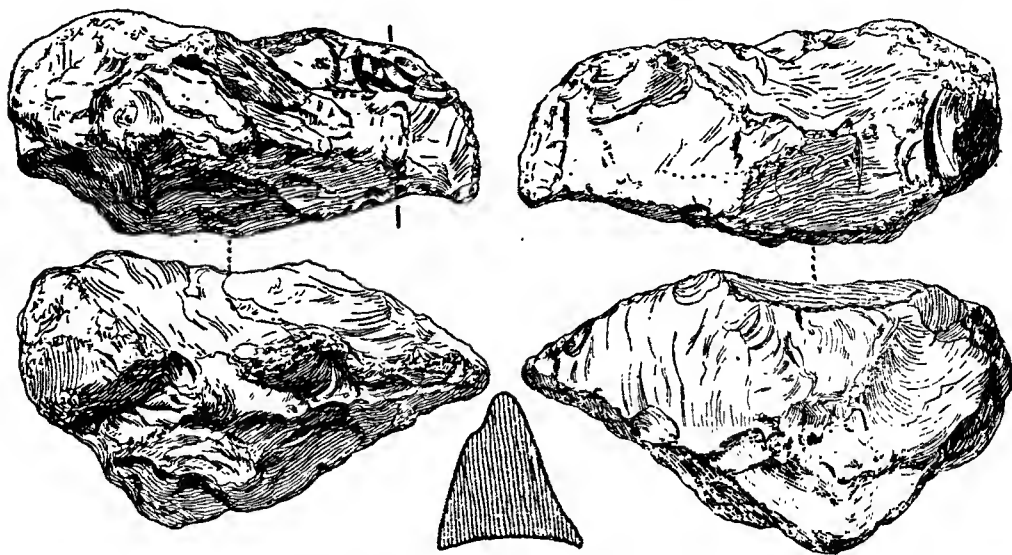
FIGS. 17 AND 18.—THREE VIEWS OF FLINT FLAKE WITH FACETTED STRIKING-PLATFORM FROM MIDDLE GLACIAL GRAVEL. $\times \frac{2}{3}$.

such as that illustrated in this paper (Figs. 2, 3 and 4). But the flake under description has been struck from a nucleus which must have approached in form those found at Baker's Hole in the Thames Valley (see R. A. Smith, *Archæologia*, lxii, 1911), and which from their peculiar shape have been known as "tortoise cores." These cores bear large flake-scars over nearly the whole of their surfaces, and when the needed flake was struck from them it necessarily carried away with it a portion of the previously flaked surface. As the flake-scars upon this surface were of large size, it follows that they are greatly truncated upon the flake detached from the core. Moreover, as these cores were flaked over the greater part of their surfaces, the flake-removing blow did not always fall upon a flat surface, but as often as not carried away a portion of the original flake-scars, thus giving rise to what is known

as a facettèd striking-platform. Now if this specimen G is examined it becomes clear that it possesses on one surface heavily truncated flake-scars, and also a well-marked facettèd striking-platform. The specimen is of a lightish drab colour slightly flaked with white, and bears a moderate glaze. The bulbar surface (Fig. 18) shows a well-developed bulb of percussion and *écaillage*, together with faintly marked conchoidal rippling and numerous fissures. The upper surface (Fig. 17) exhibits ten truncated flake-scars which show both conchoidal rippling and fissures. The edges of the specimen have, in places, been modified by secondary flaking and the flint has the appearance of having been subjected to rolling by water action. The surfaces of the specimen bear a good number of striæ and incipient cones of percussion; the flaking, with the exception of one small flake-scar, is all of one period.

Implements.—It is proposed to describe first those specimens which have been made from the actual flint nodule and not from a flake struck from such a nodule.

Specimen A (Figs. 19, 20, 21, and 22).—This specimen represents a typical

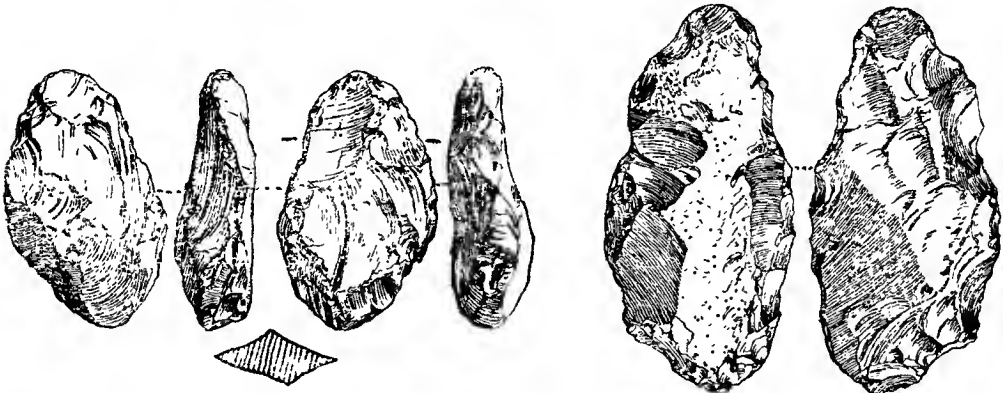


FIGS. 19-22.—FOUR VIEWS AND SECTION OF A ROSTRO-CARINATE FLINT IMPLEMENT FROM MIDDLE GLACIAL GRAVEL. $\times \frac{2}{3}$.

rostro-carinate such as has from time to time been found in the Middle Glacial Gravel, and one of which has been figured and described by Sir Ray Lankester (*Phil. Trans.*, Series B, Vol. 202, p. 300, Figs. 6 and 7); these Middle Glacial rostro-carinates are generally smaller and more symmetrical than those recovered from the detritus bed beneath the Pliocene Reg Crag of Suffolk. The specimen under examination is well glazed and of a light chestnut-brown colour. The ventral surface (Fig. 22) is curved and composed of one large fracture, showing conchoidal rippling and fissures and four other flake-scars, which by their form may be of thermal origin. The right and left lateral surfaces (Figs. 19 and 20) exhibit numerous truncated flake-

scars which show either conchoidal rippling or fissures, while the dorsal surface (Fig. 21) possesses a prominent and curved carina or keel and a somewhat battered area towards the posterior region of the implement, which may perhaps be regarded as representing the dorsal platform. The posterior region or stern is wide and heavy, and exhibits patches of cortex and some amount of battering. This battering, which occurs only upon the outstanding portions of the implement such as the keel and the ridges between the flake-scars, is peculiar, in view of the fact that the flake-scars themselves exhibit only a few insignificant striæ and incipient cones of percussion. The specimen appears to have been subjected to a slight amount of rolling by water action, and is of a triangular section. All the flaking on the implement is of one period. When the specimen is held with the narrow, beaked end towards the observer, a slight left-hand asymmetry is observable.

Specimen B (Figs. 23, 24, 25, and 26).—This specimen represents a small though otherwise typical hand-axe, or "platessiform" implement. As has been already



FIGS. 23-26.—FOUR VIEWS AND SECTION OF SMALL PLATESSIFORM IMPLEMENT OF CHELLIAN TYPE FROM MIDDLE GLACIAL GRAVEL. $\times \frac{2}{3}$.

FIGS. 27 AND 28.—TWO VIEWS OF SMALL PLATESSIFORM IMPLEMENT OF CHELLIAN TYPE FROM MIDDLE GLACIAL GRAVEL. $\times \frac{2}{3}$.

mentioned, the majority of the humanly-fashioned flints from the Middle Glacial Gravel are small, and as large flints of any kind are rare in this deposit, it would seem probable that the ancient flakers of flint did not have access to material of large size during the period with which we are dealing. Thus the smallness of the palæolithic implement under examination is in accord with the majority of the humanly-fashioned flints found in the Middle Glacial Gravel. The specimen bears a high glaze, and exhibits the unchanged yellowish-black colour of the original flint. It is roughly rhomboidal in section and shows signs of having been subjected to rolling by water action. No cortex is observable upon any portion of its surfaces, but the remains of the ventral striking-platform produced in the preliminary shaping of the original flint nodule is retained. The flake-scars exhibit both well-marked conchoidal rippling and fissures, and also a few small striæ and incipient cones of

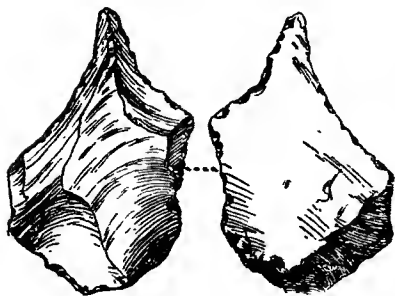
percussion. The flaking of the specimen is all of one period, and when the implement is viewed edge on (Figs. 24 and 26), it is seen that these edges show, more or less clearly, the S curve which many platessiform specimens possess.

Specimen C (Figs. 27 and 28, Pl. IV, Fig. 8).—This specimen may also be regarded as a small platessiform implement, though it is not so well made as the example just described. It exhibits a moderately high glaze and is of a light chestnut-brown colour. One surface of the implement (Fig. 28) shows flake-scars all over it, and these flake-scars exhibit the usual conchoidal rippling and fissures. The other side of the specimen (Fig. 27) is largely cortex, but it shows truncated flake-scars round nearly the whole of its circumference. The implement appears to have been subjected to some amount of rolling by water action, and its flaked surfaces exhibit a number of striæ and incipient cones of percussion. The flaking, with the exception of two small flake-scars, is all of one period, and when viewed edge on the edges are seen to be more or less straight. The author showed both the foregoing implements to the late Dr. W. Allen Sturge, who stated that both appear to belong to the Chellian phase, and to bear a marked resemblance to many artefacts of this epoch found in gravel in the Thames Valley, and with this opinion the author is in agreement. Altogether ten rougher specimens (in addition to those described above) of Chellian, platessiform type, have now been found in the Middle Glacial Gravel of Messrs. Bolton & Co.'s pit.

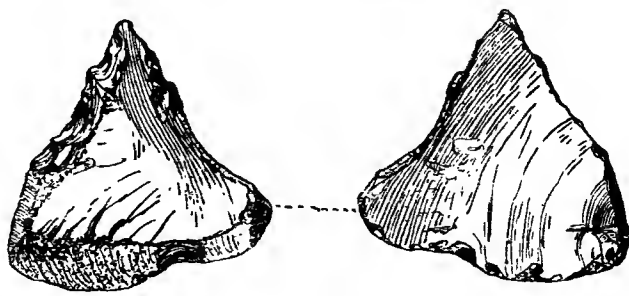
IMPLEMENTS MADE FROM FLAKES.

The most numerous implements of the Middle Glacial Gravel are made from flakes, and it is now proposed to describe a typical series of the specimens of this order which have been recovered.

Specimen A (Figs. 29 and 29A, and Pl. IV, Fig. 2).—This specimen exhibits a



FIGS. 29 AND 29A.—TWO VIEWS OF
FLINT "POINT" FROM MIDDLE
GLACIAL GRAVEL. $\times \frac{2}{3}$.



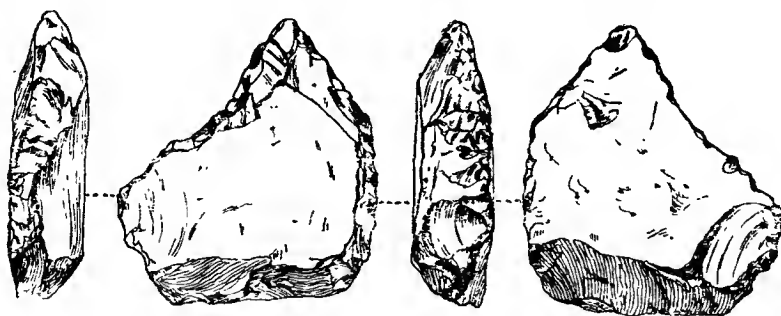
FIGS. 30 AND 31.—TWO VIEWS OF
"POINT" FROM MIDDLE GLACIAL
GRAVEL. $\times \frac{2}{3}$.

well-marked glaze, and the unchanged greenish-black colour of the original flint. It has evidently been struck from a prepared core, as it possesses a faceted striking-platform, and one surface (Fig. 29) is covered by heavily truncated flake-scars which

exhibit the usual conchoidal rippling and fissures. The bulbar surface (Fig. 30) shows a clearly defined bulb of percussion, faint conchoidal rippling, and groups of radiating fissures. The specimen does not appear to bear any striæ or incipient cones of percussion upon its surfaces, neither does it show much evidence of having been subjected to the action of rolling by water. The flaking is all of one period, and the edges of the flint have been modified by minute secondary flaking. The implement may be regarded as a "point" and represents a well-marked type in the Middle Glacial Gravel.

Specimen B (Figs. 30 and 31, and Pl. IV, Fig. 6).—This specimen may also be regarded as a point. It carries a high glaze and exhibits the brownish-black colour of the original flint. The upper surface (Fig. 30) is formed by one large flake-scar, and exhibits numerous and well-developed fissures. A narrow band of cortex is observable along the edge opposite to the point of the implement, and a similar band is to be seen upon a portion of the right-hand edge. The specimen is of a triangular shape and the sides of the triangle have been modified by dexterous edge-flaking which has given to the implement its pointed form. The bulbar surface (Fig. 31) shows a partially developed bulb of percussion and *écaillage*, together with conchoidal rippling and clearly marked fissures. The upper surface of the specimen is scored with numerous small striæ and bears a few incipient cones of percussion, but the flint does not show much signs of having been subjected to rolling by water action. The flaking is all of one period.

Specimen C (Figs. 32, 33, 34, and 35, and Pl. IV, Fig. 4).—This specimen is well glazed and exhibits a dark chocolate-brown colour. The upper surface (Fig. 33) is

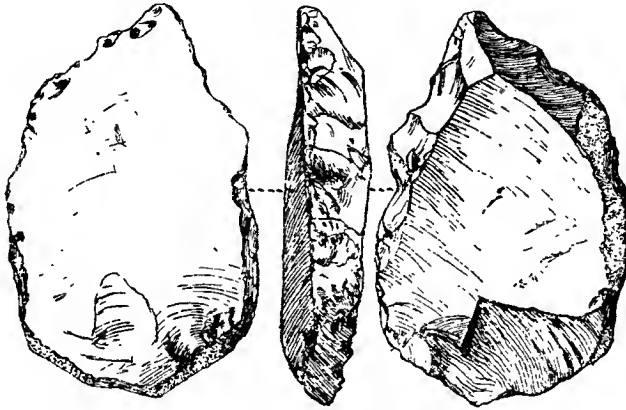


FIGS. 32-35.—FOUR VIEWS OF FLINT "POINT" FROM MIDDLE GLACIAL GRAVEL. $\times \frac{2}{3}$.

formed of three truncated flake-scars which show the usual conchoidal rippling and radiating fissures. The specimen is of a triangular shape and the whole right-hand side of the triangle (Fig. 34) has been modified by skilful secondary flaking. The left-hand side has also been modified in a similar manner. A very small patch of cortex is observable at the extreme point of the implement, the under surface (Fig. 35) is formed of three truncated flake-scars, two of which exhibit conchoidal rippling and fissures, while the third shows only the latter characteristic. The flaked surfaces

of the specimen are scored with small striæ, and bear, moreover, a number of incipient cones of percussion. The flint appears to have been subjected to some amount of rolling by water action. The flaking is all of one period and the specimen may be regarded as a good example of the Middle Glacial point.

Specimen D (Figs. 36, 37, and 38).—This specimen is moderately glazed and of an ochreous brown colour mottled with black and yellow. The upper surface (Fig. 38) is formed of three truncated flake-scars which exhibit the usual conchoidal rippling and radiating fissures. The implement is more or less of a triangular shape and at the base of the triangle a late fracture is observable which shows that the interior of the flint is greyish-black. The base and a portion of the right-hand side of the triangle exhibit cortex, but the left-hand side (Fig. 37), and the upper portion of the right, have been modified by skilful edge-flaking, which has given to the implement its definite pointed form. The bulbar surface (Fig. 36)

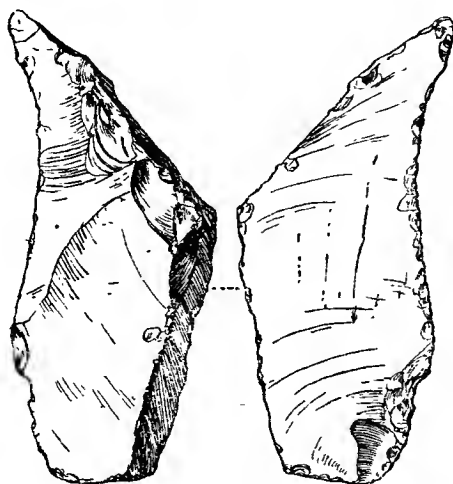


FIGS. 36-38.—THREE VIEWS OF FLINT "POINT" FROM MIDDLE GLACIAL GRAVEL. $\times \frac{2}{3}$.

shows a flat striking-platform formed of cortex and two bulbs of percussion, showing that two blows were necessary to remove the desired flake. This surface exhibits also a well-marked *écaillage* and clearly defined fissures. The flaked surfaces of the specimen bear numerous striæ and incipient cones of percussion, and the flint appears to have been subjected to some amount of rolling by water action. The flaking, with the exception of the late fracture already mentioned, is all of one period. The specimen may be regarded as a good example of the Middle Glacial point.

Specimen E (Figs. 39 and 40, and Pl. IV, Fig. 5).—This specimen is highly glazed and is of a light greenish-brown colour. The upper surface (Fig. 39) is formed of two large truncated flake-scars and of several smaller and more or less complete secondary flakings. These flake-scars exhibit the usual conchoidal rippling and radiating fissures. The "back" of the implement—for it is made from a thick flake—is formed of three large truncated flake-scars, which also exhibit conchoidal rippling and radiating fissures. The bulbar surface (Fig. 40) shows a flat striking-

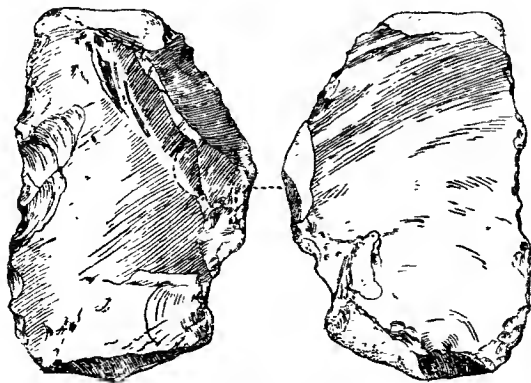
platform formed of cortex, a well-marked *écaillage*, conchoidal rippling and fissures. The right-hand curved edge of this surface has been modified by secondary flaking,



FIGS. 39 AND 40.—TWO VIEWS OF FLINT IMPLEMENT FROM MIDDLE GLACIAL GRAVEL. $\times \frac{2}{3}$.

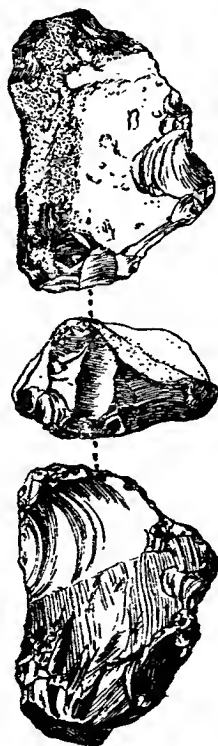
and it would appear probable that the implement was held in the left hand with the index finger curved over the thick "back" of the specimen. If held in this way the curved edge could be used for scraping or cutting purposes, and the presence of the secondary flaking seems to point to this procedure having been adopted by the ancient craftsman. The flaked surfaces of the specimen exhibit one or two small striæ, and fairly numerous incipient cones of percussion. The implement, however, does not show much signs of having been subjected to rolling by water action. This specimen, so far as the author's knowledge goes, is unique in the Middle Glacial Gravel. All the flake-scars observable upon the implement are of one period.

Specimen F (Figs. 41 and 42, Pl. IV, Fig. 9).—This specimen possesses a moderate



FIGS. 41 AND 42.—TWO VIEWS OF FLINT RACLOIR FROM MIDDLE GLACIAL GRAVEL. $\times \frac{2}{3}$.

glaze and is of a darkish brown colour. The upper surface (Fig. 41) is formed by three flake-scars, two of which are truncated, while the third and largest exhibits nearly the whole of the negative bulb of percussion. These flake-scars show the usual conchoidal rippling and radiating fissures. The whole of the left-hand edge of this surface has been modified by skilful secondary flaking. The bulbar surface (Fig. 42) possesses a flat striking-platform and a well-developed bulb of percussion. An examination of the apex of this bulb shows that several blows were delivered upon almost the same spot before the detachment of the flake was accomplished. The right-hand edge of the bulbar surface exhibits patches of cortex, as does also the edge opposite to the bulb of percussion. This surface exhibits further well-marked conchoidal rippling and radiating fissures. The flaked surfaces of the specimen show a few small striæ and several incipient cones of percussion, though the flint does not appear to have been subjected to much rolling by water action. The flaking is all of one period and the implement may be regarded as a good example of the Middle Glacial *racloir* or side-scraper.



FIGS. 43-45.—THREE VIEWS OF STEEP-FACED FLINT SCRAPER
FROM MIDDLE GLACIAL GRAVEL. $\times \frac{2}{3}$.

Specimen G (Figs. 43, 44, and 45).—This specimen is moderately glazed and of a dark chocolate-brown colour. The upper surface (Fig. 43) is composed almost entirely of cortex, but its two sides have been modified by some amount of secondary

flaking. The front of the implement (Fig. 44) is formed of a number of flake-scars, exhibiting conchoidal rippling, and which cut into the cortex of the upper surface. The under surface (Fig. 45) is formed of two large truncated flake-scars and some more or less complete secondary flakings. These flake-scars show either conchoidal rippling or radiating fissures, and in some cases both these characteristics. The flaked surfaces of the implement exhibit a few small striæ and some incipient cones of percussion, and the specimen appears to have been subjected to a certain amount of rolling by water action. All the flaking is of one period, and the implement may be regarded as a steep-faced scraper such as occurs in the Middle Glacial Gravel under discussion.

The specimen illustrated in Pl. IV, Fig. 7, is depicted, principally, to show the light blue colour which some of the humanly-fashioned flints in the Middle Glacial Gravel assume. This flint may be regarded as a flake struck from a previously "worked" core. The edges of the specimen have been modified by secondary flaking and its surfaces are scored by numerous striæ, which show up as thin white lines. Some incipient cones of percussion are observable upon the flint, which, moreover, has been subjected, apparently, to some amount of rolling by water action. The flaking is all of one period and the specimen shows some ferruginous stains upon certain portions of its surfaces. It represents a common type in the Middle Glacial Gravel.

THE CONCLUSIONS ARISING FROM THE FOREGOING EXAMINATION OF THE HUMANLY-FASHIONED FLINTS, ETC., FOUND IN THE "MIDDLE GLACIAL" GRAVEL IN MESSRS. BOLTON & Co.'s PIT.

This examination has shown that a series of flint implements and flakes occurs in the gravel under discussion, and that these specimens do not exhibit any very marked signs of abrasion and rolling by water action such as is observable upon certain platessiform implements found in river terrace gravels and other deposits. It seems reasonable, therefore, to regard it as a possibility that the place where these Middle Glacial specimens are now found cannot be far removed from the deposits on or in which they rested in an unabraded state, before these deposits were broken up by the water action responsible for the formation of this gravel. Further, the more or less unabraded condition of many of the humanly-fashioned flints recovered, and the presence with them in the gravel of a number of easily broken shells, would seem to indicate that the water which laid down the Middle Glacial deposit was not of a turbulent nature. The only "dateable" artefacts so far recovered from the gravel under examination are the small platessiform flint implements which have been described. These, though small, otherwise resemble closely the well-known early Chellian implements both in form and flaking, and the author does not hesitate to refer the specimens he has found to that epoch. The occurrence of flint implements of early

Chellian form in a gravel presumably more ancient than the glacial chalky Boulder Clay will no doubt come as a surprise to many archæologists, but there does not seem to be in this case any escape from such a conclusion. It is well also to call to mind that in the *Memoirs of the Geological Survey*, "The Geology of the London District," p. 68, it is stated that "the Geological Survey, at any rate, has classed as Glacial, gravels in which palæolithic implements have been found." Thus it is clear that platessiform flint implements have already been found in the Thames Valley in gravels regarded by the geologists who investigated them as of glacial origin, and the discovery at Ipswich merely supports and confirms their conclusions. But whether the glacial gravels at Ipswich and in the Thames Valley are of the same age is at present unknown, and the author is unable to throw any light upon this question. The hammer stones, cores, flakes, and flake implements found in the Middle Glacial Gravel in Messrs. Bolton & Co.'s pit, may represent the subsidiary artefacts of the Chellian period, and it would be expected that such specimens would be more numerous than more elaborate and highly finished hand-axes. Unfortunately, in this country, very little attention has been given to the scrapers, borers, trimmed flakes, etc., which occur in river valley deposits, in association with the much-sought-for oval and pointed platessiform implements. But unless these subsidiary artefacts are collected and examined, it will not be possible to form even a moderately accurate idea of the attainments of the people who made these particular implements. This has apparently been recognised by some archæologists upon the Continent, as, in Osborn's *Men of the Stone Age*, Fig. 76, a series of illustrations of the trimmed flakes, etc., of the Chellian period is given. These specimens were collected by Commont and Obermaier and appear to approximate very closely in their form and method of manufacture to a number of the flaked flints recovered from the Middle Glacial Gravel at Ipswich. The presence in the Middle Glacial Gravel of specimens exhibiting crackling and fractures such as is known can be produced upon flints by the action of heat may perhaps point to a possession on the part of the ancient flint flakers of the knowledge of how to produce fire, but at present this must be regarded only as a suggestion.

As has already been mentioned earlier in this paper (p. 75), the author has himself found humanly-fashioned flints in two different deposits of Middle Glacial Gravel exposed in pits to the north-west and east of Ipswich, and situated some distance away from Messrs. Bolton & Co.'s excavation. He has also been able to examine a series of specimens collected by Mr. Joseph Cox at Gresham, Norfolk, and by Mr. Guy Maynard of Saffron Walden. Both these gentlemen have found the implements submitted to the author in deposits of gravel regarded as of glacial age, and many of the specimens present an appearance very similar to the artefacts found at Ipswich and described in this paper. It thus seems possible that further search may establish the fact of the occurrence of humanly-fashioned flints in glacial deposits in various parts of the country.



- 4 { Surface soil, 6 ins.
- 3 { Chalky boulder clay, 4 to 5 ft.
- 2 { Stratified material, about 3 ft.
- 1 { "Middle Glacial" gravel with oblique stratification, 7 ft.

SECTION SHOWING CHALKY BOULDER CLAY OVERLYING "MIDDLE GLACIAL" GRAVEL IN MESSRS. BOLTON AND CO.'S PIT (PIT NO. 2), IPSWICH.

FIG. 1



FIG. 2



FIG. 3



FIG. 5



FIG. 4

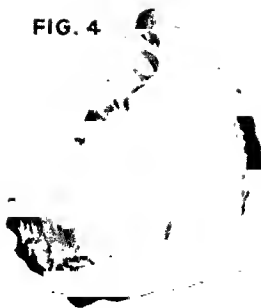


FIG. 6



FIG. 7



FIG. 8



FIG. 9



SUMMARY.

(1) The specimens described have all been found in a gravel exposed in a pit in the brickfield of Messrs. A. Bolton & Co., Ltd., Henley Road, Ipswich.

(2) This gravel is of a glacial age and is surmounted by a series of deposits generally regarded as having been laid down during what is known as the Chalky Boulder Clay Glaciation.

(3) The gravel deposit in Messrs. Bolton & Co.'s pit is that generally described as "Middle Glacial," but it is not at present possible to state with confidence that the bed under discussion is of actual Middle or Inter-glacial age.

(4) The relics collected from the Ipswich deposit are (a) Quartzite Hammer Stones, (b) Cores, (c) Flint Flakes, (d) Flint Implements, (e) Calcined Flints.

(5) The humanly-fashioned flints are small, but some of them approximate to the type of early platessiform implements known as "Chellian."

(6) It is possible that several human periods may be represented in the gravel, but this is not at present capable of proof.

(7) The edge-trimmed flakes and flake implements struck from "prepared" cores may represent the subsidiary artefacts of the Chellian epoch.

(8) A certain number of rolled marine shells and mammalian bones occur in the gravel, but these do not throw much light upon the mode of origin of the deposit.

(9) The presence, however, of humanly-fashioned flints would seem to point to the bed having been formed, at least in part, by a land surface broken up and re-deposited by water action.

(10) The author has found humanly-fashioned flints in "Middle Glacial" Gravel at Coe's pit, Bramford, and Foxhall Hall, Ipswich, and these specimens, which he hopes to describe on some future occasion, may be regarded as of the same order as those described in this paper.

(11) The presence of calcined flints in the "Middle Glacial" Gravel at Ipswich may perhaps point to the makers of the flint implements discovered being in possession of a knowledge of the manner in which to produce fire.

NOTE.—All the specimens figured in this paper are now preserved in the British Museum, Bloomsbury.

SOCIAL ORGANIZATION IN SAN CRISTOVAL, SOLOMON ISLANDS.

By C. E. Fox.

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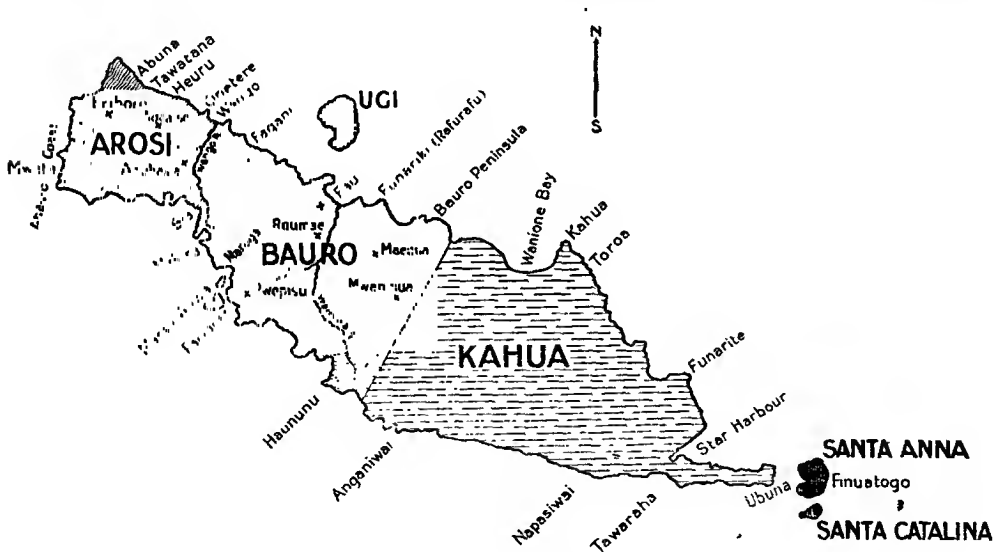
A.—INTRODUCTION.

IN a paper printed in the *Journal of the Royal Anthropological Society* in 1915, Mr. Drew and I described some of the religious beliefs and customs of the people of San Cristoval, but we touched only to a slight extent on their social organization: the chief object of this paper is to give a short account of the latter.

Since Mr. Drew and I wrote our paper Dr. Rivers has published his *History of Melanesian Society*. In this book, although there is very little about San Cristoval, two systems of relationship obtained from Mr. Drew are given, one from Heuru and one from Rafurafu. Those given in this paper may be considered as amplifying and to some extent correcting the terms given by Dr. Rivers.

It is possible to divide San Cristoval into several large districts fairly distinct from one another, both in their social organization and in their beliefs and customs, and in this paper the following names are used.

1. *Arosi*.—This is the native name for less than a mile of coast line close to Tawatana, on the north coast; it is marked on the Admiralty chart of the island,



but is there made to appear as the name of a considerable district, and as it is a convenient name I have given it a still wider signification and use it for the whole of the west end of the island, beginning at Wango on the north coast and extending to Makira Harbour on the south coast, including also all the bush villages. The eastern boundary is really the Wango river, which rises close to Makira Harbour and runs north-west and north till it flows out at Wango. This district is distinct from the rest of the island. Throughout it only one language is spoken, and the dialects do not differ much from each other, even in vocabulary. These people are all totemistic, divided into a number of exogamous clans with bird totems, and they all cremated the dead; though some, it is said, only cremated those taken

in war. Burial in the ground, on rocks, in bowls, in canoes, in trees, in the sea, and in several other ways is also found among them,¹ as elsewhere in San Cristoval, but cremation appears to be found in this district only, and with the bird clans marks Arosi off from the rest of the island. Another feature of this district is the stonework, the elaborate stone walls called *ariari* being found only here. This is the district of whose language Bishop Patteson printed a fairly full and very accurate vocabulary in 1857, which was made the basis of von der Gabelentz' work in dealing with these Melanesian languages. The Bishop called the language Bauro, probably from the native name for the coast at the western extremity, especially from Mwata to Rimahui (the part which the Bishop first visited and from which he got boys for his school), but that name is properly Abauro,² and must not be confused with the peninsula called Bauro or Bwauro in the Admiralty Chart, in the middle of the north coast, a name used in this paper for the central district of the island. The use of Bauro for the name of this western language and people probably led the Melanesian Mission to call the whole island by the same name, and the influence of the Mission extended the use, so that the chart calls the whole island "Bauro or San Cristoval." Mendana visited the west end of Arosi in 1566 and his pilot Gallego calls it Paubro.

2. *Bauro*.—This is the native name for the peninsula in the middle of the north coast, and it is so called on the Admiralty Chart. It is used here for the name of the district from Arosi eastward, and perhaps that ought to include the whole of the island, at any rate up to the long narrow peninsula at the east end. However, as my own knowledge only extends at all completely to the peninsula itself, and thence across to Haununu on the south coast, the name Bauro is used for the district extending eastward from Arosi up to a line drawn roughly from Bauro to Haununu. This district is quite distinct from Arosi. The people of the interior have a dual organization of society and though on the coast some totemistic clans (but usually not bird clans as in Arosi) are also found, there also the dual organization plainly underlies them. The relationship terms are very interesting and in some respects different from any known to me in other parts of Melanesia, especially in the fact that not only all the terms, but also all names, have prefixes to distinguish the sex, so that here the term used depends on the sex of the person addressed. The snake worship has its home in this district, and the use of large wooden gongs is characteristic. These gongs are not merely used, as in Arosi, to send a few short and well-known messages, but are used as a regular means of conveying information from village to village, and by an ingenious system of special beats for a large number of words

¹ A note on the disposal of the bodies of the dead will be found at the end of this paper.

² Bishop Patteson evidently considered the *a* to be a locative preposition as in the San Cristoval names for Rennell, Bellona, and Ugi (Amoraha, Amokiki, Augi). But here I think the *a* is part of the name.

and a liberal use of metaphor ("tree of the sea" representing ship) almost any message can be sent to a village as much as eight miles distant. Some of the people of the interior are almost nomadic, for though they have villages they seldom live in them for long at a time, and wander over the country, using rough leaf shelters, making gardens in different places and camping near them and nutting from place to place. Their language is distinct from that of Arosi (though typically Austronesian), partly in its grammar, but chiefly in having older and fuller forms of words, and the dialects are numerous and differ a good deal from one another. Where the words are the same as in Arosi, the Bauro forms retain the consonants which the Arosi tend to drop.

3. *Kahua*.—The rest of the island is here called by this name, that of the prominent peninsula to the east of the big bay called Wanione Bay on the chart. This name is only used provisionally, but perhaps this region will be found to possess features making it distinct from Bauro, which, generally speaking, it resembles.

4. *Santa Anna*.—This is a small island four miles from the east end of San Cristoval. Perhaps with this should be included Santa Catalina and the narrow peninsula up to Star Harbour on the mainland. These people are very distinct, but all that I know of them was gained in two short visits to Santa Anna. It is a great pity that so little has been learnt, as the people are fast disappearing. They are totemistic people with a few clans named chiefly from aquatic animals. Their totemism is the most pronounced totemism found in this part at least of Melanesia.

5. *Ugi*.—This is the name of a small island six miles from the mainland and opposite Wango. It is now practically an Ulawa colony, and Ulawa is generally spoken, though the original language is still known by a few people. Its language, though like that of Ulawa, is allied to the Bauro language in some respects; and probably the same is true of the social organization, a knowledge of which can hardly now be obtained. The Spaniards called this island San Juan.

Speaking generally, the people at both ends of San Cristoval, where it is narrow (at Wango it is only twelve miles across), and on the outlying small islands and even on the coast of the main mass of the island, are organized into a number of totemistic clans—bird clans to the west, aquatic clans to the east, and both along the coast of the central part. But the people of the large central portion of the island are a dual people, without totemism; and traces of this dual organization are found even in the districts where the totemistic clans now exist; so that the former seems to be the older.¹

¹ My informants as to the facts given in this paper have been so many natives, in so many villages, that it is impossible to mention all, but the following are some of the principal ones. In Arosi, Taki of Wango, the famous chief, who lately died when probably over eighty years old, gave me the Wango totems and other facts. Monongai of Heuru has given me much: it

B.—THE AROSI DISTRICT.

1. *Arosi Villages.*

Arosi is not a very large district—about sixty miles of coastline with about thirty villages, and perhaps another eighty villages inland, most of the latter very small. It must once have had a large population. If the accounts of the Spaniards are to be trusted, the population was large when they visited it in 1566. In 1846 the Roman Catholic fathers who settled at Makira Harbour describe the population as much larger than it is now, and a good deal later Dr. Guppy speaks of five hundred people in Wango where now there are less than one hundred. In the interior there are numerous sites of old villages, a cluster of coco-nuts perhaps marking the place where a village stood. Behind Heuru from one hilltop I was shown the sites of forty-six once flourishing villages of which now only three remain, and most of these forty-six were inhabited fifty years ago, before the great dysentery epidemic of that time. Every few years dysentery passes through the bush villages, killing scores, or even hundreds, and probably the day is not far distant when there will be no living people in the interior and only a few half-civilized, pidgin-English-speaking people on the coast.

The real Arosi village is only to be seen in the bush, for those on the coast are chiefly villages made by people who have come down to the coast to school. Practically all the coast villages of Arosi have been Christian for some years, and in some ways they show a real difference from the typical and original Arosi village of the interior. This western end of the island is largely limestone, though there are high volcanic hills as one goes east, but the interior in the limestone country consists of a high and breezy plateau with very deep and steep intersecting valleys, sometimes almost as steep as a Colorado canyon, so that two villages almost inaccessible by path are within hail of one another. On this plateau are many open

was he who first reported the practice of chewing or making a drink from what is probably the root of *Piper methysticum* in certain Arosi bush villages: the root is called *Awaawa* and *Bae kakawa*. Siwa, the chief at Mwata, and Toso, the chief of Adoaios in the interior, are two of my best informants. Others are Oroaniia of Wango and Ariaahu, chief of Bia, and Risibara, chief of the bush village of Erihoro. In Bauro Waumi of Fagani, Warite of Rafurafu, Waharumwane the chief of Mwanihuki, Ringewete of Fau, Wakere the fighting chief of Pounamu, and Haganihinua the chief and hereditary snake priest of Haununu (an old man who probably knows more San Cristoval folklore than anyone else now living). To these must be added my two *marahu* Waiau of Rafurafu (Funariki) and Takibaina of Heuru; also Taonga of Santa Anna and (for the few facts about clans at Saa) Lausaka of S.E. Malaita. All the villages given on the map I have visited myself, and at most I have spent some time. The courses of the Wango and Wairaha rivers are used by natives as the easiest means of crossing the island, and I have crossed at both places: in neither case does the traveller see at the present time a single village, though there are villages on the streams which flow into the Wairaha. The facts about the language of Marau Wawa were obtained from Haruimae, the last living native of the place, a man about fifty years old, now living at Abaosuu, a village on the south coast close to Marau Wawa.

spaces covered with bracken fern and rich in bright coloured wild flowers, and here and there is a series of little knolls on which a village is perched, each knoll carrying on its crest four or five houses in which the members of one of the village clans live together, and one of which is the guest house, over the gable of which is carved the totem bird of the clan. Each cluster of houses is only a stone's throw from the next and there may be four or five such clusters along the ridge, the whole forming a village. The village itself is probably surrounded by a stockade and may have across the middle an *erihoro*, that is a deep ditch, which in one case at least is some 80 yards long, 30 feet deep, and too wide to leap across. These huge ditches are also found in Bauro.

The shore village is larger than any subgroup of a bush village and sometimes as large as the whole village, *i.e.*, about one hundred people, and now, at any rate, there is no grouping into clans. It is often characterised by the possession of an *ariari*, a kind of stone wall.¹ An ordinary stone wall to keep out pigs from a garden or to mark a boundary is called *dua*, and is roughly made, but the *ariari* is quite different and is really a stone platform very carefully and well built of large even stones, its sides even and its top broad and flat. It may be as much as 12 or 15 feet broad and 4 or 5 feet high and does not extend right round the village. It has several entrances, all of which were in former times taboo to women, except one which was the common entrance for everybody in the village. On the broad flat top of the *ariari* the *aihuri*, a tree with yellow leaves, and the *niu bara*, the pale yellow coco-nut, were planted, and sometimes houses were built. The *niu bara* is a more or less sacred tree, in some parts of San Cristoval almost a totem, and in Arosi it is also planted at the *pirupiru*, the sacred place by the shore where sharks are worshipped; and here too a large circular *ariari* is built round it. Most natives say the *ariari* is only a protection from the surf, but this seems unlikely,

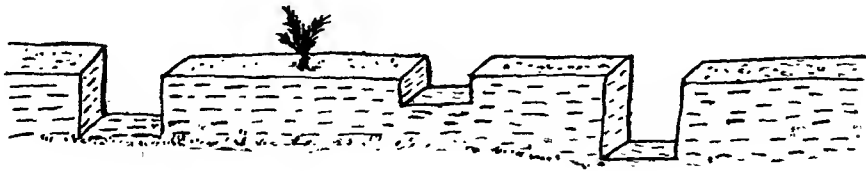


FIG. 1.

Ariari at Ubuna in Arosi; 3 ft. broad, 5 ft. high at highest part, with openings of different heights, all taboo to women; a sacred tree, the light coloured coco-nut, growing in the centre.

The wall is overgrown with grass. The stones are not worked stones, and the making of this particular *ariari* is quite recent.

¹ There are also other stone structures in Arosi; and large pyramidal and square mounds, on the flat tops of which the dead were buried. Sometimes these were of earth, and it is hoped to describe them fully, with the burial customs.

for it is too elaborate, with its careful building and numerous entrances which were once taboo to certain people; moreover, there is the circular *ariari* at the *pirupiru* and also an *ariari* at the *hera* (burial ground), some of these latter being found inland, and on these stone platforms sacrifices were offered to the dead.¹

Native explanations cannot always be accepted. In our paper Mr. Drew and I referred to a native explanation of the origin of a clan as "a theory of the native anthropological society," and native explanations often are of this kind. Many natives have never reflected on the origin of their customs, and if you ask them why such and such a thing is done, they answer, "Why, indeed!" and add that everyone does it; but there are others who have reflected about such things and are ready with a reason, either their own individual explanation or that generally accepted by native opinion. Their own explanation will have less weight than the generally accepted opinion, "the theory of the native anthropological society," and yet even the latter may be wrong. It is the custom in Arosi to bury alive the first-born child (boy or girl); many individual explanations are given; the "theory of the native anthropological society" is that the first-born is not likely to be the real child of the mother's husband. In the same way it is the general opinion that the *ariari* are only a protection against the surf, an opinion which seems inadequate.

The Arosi belief is that the present coast population is more recent than that of the bush, and so also the Bauro people think; and the land along the coast is the property of the people who lived in the bush behind it, and of descendants of these bush people who came down and settled along the coast, and all the shore was peopled in this way. The first people who came to San Cristoval (so runs one Arosi story) came in the time of the great *Ruarua*, a flood of waters from rain and oncoming sea combined, the *Ruarua* that covered the whole of San Cristoval, even the highest hills over 4000 feet high! They came in a large canoe from Mwara (Malaita)—there has been a second and much later immigration from Mwara—but originally from a country far to the north-west, whose name is known and handed down (I never met anyone who knew the name, though I was always told that others could tell me). From this mysterious land came to Mwara and thence to Arosi the great canoe, a very large canoe full of men, women, pigs and dogs, and they paddled inland in the time of the *Ruarua* over what is now Waimarai Coco-nut Plantation, until the canoe touched on the flat top of a high hill inland, a hill still sacred (*maea*), which was the first land to become dry when the waters subsided.² From there they spread over Arosi, and they were the oldest clan, called the Mwara

¹ At the present time at least *ariari* are only found at the west end of the north coast, so they may be a more or less recent importation from Malaita; for one hears of stone buildings there, and Mr. T. Williams told me he had found large stone walls in the interior and also stone buildings.

² Some parts of this story, I think, may be coloured by Christian influences.

clan. There is another Mwara clan found in that part of Arosi nearest Mwara, but this is a much later, and in fact recent, immigration. A great many people must have been drowned in this flood, for at Mwata, a village at the west end, the "men of Mwara" are pointed out, a number of brown rock pillars under the cliff, very regular, about 3 feet high, standing rank on rank, and these are said to be men who were drowned at the time of the great *Ruarua* and cast up on the shore when the canoe brought the first people to Arosi.¹ Arosi itself, and indeed San Cristoval and the neighbouring islands, had been already fished up from the sea by Aomarau (Mauwa in the Ulawa story). There is a point near Anuda in Arosi covered with pale yellow, feathery clumps of bamboo, where Ao threw down his rod when he ran to help the *Pwaronga* (fairies) bind up the *Hau i rohu* (Rock of the west) which holds up the island, and which had cracked. Ao was at the time fishing up the little islets on the south coast, but in his haste he threw his rod down, and hence the bamboos growing so thickly on the point. I have not heard of Ao or of the flood of waters in other parts of San Cristoval: the stories seem to belong to the bird clan people.

2.—*Arosi Totemism.*

From this short account of Arosi itself I pass on to the social organization of its people. They are divided into exogamous clans with matrilineal descent (except in one or two cases to be referred to presently), and each clan has a totem, which is generally a bird. The clans are not always named after these bird totems, but there is a universal belief that the people of each clan are descended from their totem. The totem bird is treated with great respect, neither killed nor eaten, and was apparently once sacrificed to. There are two interrogative pronouns in the Arosi language, one used exclusively for persons and the other for everything else; *a tei* for persons, *taha* for things; but if you enquire about a man's clan it is common to use the former, *A tei burunga mu?* Who is your clan? and the bird is given—eagle, hawk, kingfisher, etc.; and *burunga*, one of the words for clan, means also remote ancestor, and is used by Christian natives for Adam and Eve. In several cases too there are definite stories of the origin of the clans from women or girls who turned into birds, as in the case of the owl clan, whose ancestor was a girl who changed herself into an owl, to escape from her mother. As for the taboo on eating or killing the totem bird, it certainly was strictly enforced, though there may be more laxity at the present time. I have not heard of any religious ceremonies connected with the totems, and probably none are observed nowadays; but there is some evidence that sacrifices were once generally offered in the existence of the *dara manu*, sacred bowls, literally "bird bowls." These are carved and very highly prized food bowls

¹ The people who made the great burial mounds are called *Aba rihurihu*, and are said to have "swarmed along the beaches and up the rivers."

(see drawings) in which sacrifices are even still offered. One of those figured has a snake carved in the middle of the bowl, and is the *dara manu* of the snake clan, in which sacrifices are offered to the snake, of which only the men belonging to the snake clan can partake. The bowl with a bird holding a fish in its mouth had sacrifices placed in it when the people went fishing, the fishermen eating them. The other has a small bird carved at the end which represents a seagull (*maahe*), and this had sacrifices placed in it when people went to war, those going to fight eating from this bowl. Thus, of those of which drawings are given only one is a clan bowl, but there were others for clans. The only one of which I have actual knowledge is the owl clan bowl,¹ which has the figure of an owl carved on it. Sacrifices are put in it, which only men of the owl clan can eat, sacrifices presumably to their totem. The name for these sacred bowls seems to connect them with the clans, but the figures of other birds, such as the seagull, make it rather uncertain whether all these bowls were originally clan bowls used for sacrifices to the clan

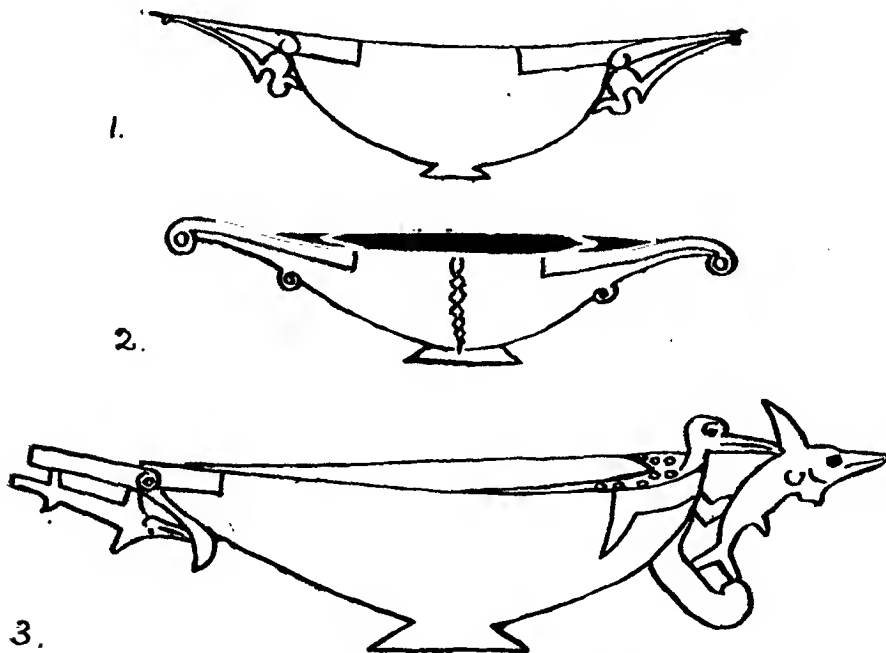
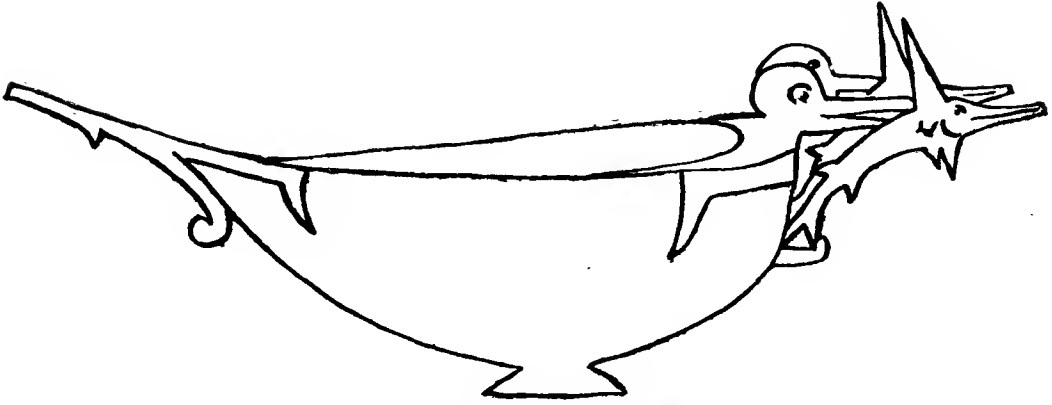


FIG. 2.—*Dara manu*, SACRED BOWLS.

1. *Dara manu* with figure of seagull, to hold sacrifices for warriors.
2. *Dara manu* with figure of snake, to hold sacrifices for the snake clan.
3. *Dara manu* with figure of bird and fish, to hold sacrifices for fishermen.

¹ I have since found a *dara manu* of the Aoba Clan, with the carved figure of the *kaopwa* bird, and in this bowl sacrifices were offered by the men of the Aoba Clan to their totem, the bird called *kaopwa*.

FIG. 3.—*Bomatana*, a *dara manu* FROM FAGANI.

totems; but some of them were so, and it is very probable that each clan had its proper clan bowl.

The clans were (and still are) exogamous with matrilineal descent, but it must be remembered that schools and civilization have for many years been breaking down the clan system in Arosi.¹ Natives are now to be found who do not know to what clan they belong. This is partly due to the fact that Christianity has been breaking down the clan system as it regulated marriage, for the earlier missionaries either did not know of the existence of the clans (even Dr. Codrington did not) or perhaps deliberately ignored them and encouraged marriage within the clan; though lately a conference of native teachers decided to forbid a man to marry a woman of the same clan. Formerly the clans were strictly exogamous, and though marriages within the clan took place, at the least a heavy fine had to be paid by the offender. An exception should perhaps be made of the clan of the chiefs (Araha), as pedigrees show many marriages of Araha men to Araha women. It is chiefly in the coast villages that the clan regulations have become laxer, and it is in these villages that the taboo against killing the totem is more lightly regarded, yet even there it is still respected. A Tawatana man lately told me he certainly would not kill either the totem of his father (eagle) or that of his mother (crab), but especially the latter; he said that if one of the crab clan were murdered he, with all other crab people along the coast, would feel bound to punish the murderer; but if an eagle man were killed he would only be "a little angry." There is certainly respect for the father's totem.

Probably it is true to say there is now very little religious meaning attached to the totems; and the clan system is purely a social organization. A member of a clan can always appeal to all the other members of his clan for help and protection and can never be destitute. Wherever he goes in Arosi he will find clansmen

¹ But I think influences from Malaita were beginning to do this before the time of schools and civilization.

who will give him hospitality, and even beyond Arosi, but, curiously enough, not so much in Bauro as in Guadalcanar or Malaita, and especially in Guadalcanar; the clans have different names there, but are identified (by the lines on the palm of the hand) with the Arosi clans. Some Guadalcanar men lately arrived in Arosi, having run away from a plantation in Guadalcanar, eighty miles distant, and were at once received and helped by the people of the Arosi clan corresponding with their own. An Ulawa man going to Guadalcanar to a village two hundred miles from his home, found people of his own clan (he was told he was Lakuili). A white trader on San Cristoval was told, after his labourers had examined the palms of his hands, that he belonged to a certain clan, and found much advantage from it. A visitor always stays with people of his own clan, and food may always be got from clansmen if they have any themselves. It is true that the Arosi clans are not such a bond of brotherhood as the Bauro moieties, still they have a similar use, and such a system has many advantages over our own; but the real importance of the clans socially lies in their regulation of marriage, since membership of the clan makes a man the relative of all the other members, and all clansmen have definite duties and privileges as regards one another. Property in land is held by the clan. The subject of ownership and inheritance must be left to another paper, but the following letter lately sent by Aitora of Heuru to the Government Magistrate will exemplify this statement. Aitora's father, Boo, was an Amaeo man, his mother an Araha woman, and he is the present chief; his father, Bo (Amaeo, but adopted to be chief), was chief before him:—

"X has seized land belonging to us without buying it, I don't wish it to be sold, this piece of land of ours belonged to my father, beginning at Omahaoru going inland to Toromanu and extending from Suuri to Mwanewawa. Maemuriani (who had sold it to X) is not the owner, it is ours of the Amaeo and Araha clans. Maemuriani belongs to the Snake (Mwaa) clan, he has no share in Boo's property. The first owner was Gougaria, and the Amaeo clan men then were Pumakekereji, Kereuhu and Koia, others who were Araha clan men were Warorai, Mwaerahairuma, Toroaruhi, Waritaimae, those are the two clans who own this piece of land."¹

Membership of the clan is, of course, specially important in the case of marriage, for when a boy or girl wishes to marry, the consent of all the members of their clans living in the village or near it must be obtained. This is not an easy matter: personal prejudices play an important part; one member of the clan, standing out for a higher payment, may stop the marriage; and the practical result at the present time is that marriages take place late, although the young men wish to marry and there are marriageable girls, if only the consent of the elders could be obtained. The members of the clan have very real power in this way and exercise it constantly.

¹ This shows Araha and Amaeo holding land in common, and this is found elsewhere.

The sense of solidarity possessed by the clan is well shown by the following incident which came under my notice. A member of the Araha clan had a young son whose death was caused in a fortnight by one of those virulent ulcers which occasionally attack the natives. Another member of Araha had committed adultery about a month previously, and this was held to be the cause of the boy's death. Boys are taught that their evil deeds will cause sickness and death in the clan.

In all the clans except two, descent is reckoned from the mother. These two important exceptions are the Mwara and Araha clans. The Mwara clan forms an exception only at the extremity of the island nearest Malaita. It seems that there are two Mwara clans, the original with a kingfisher totem and mother descent, and a much later immigration from Mwara with a hawk totem and father descent, these latter living at Tawatana. Both are called Mwara, but must be distinguished from one another. The other exception is the Araha clan, the clan of the chiefs, in which descent may be reckoned either from father or mother. As all chiefs must, strictly speaking, belong to this clan, it is no doubt wise to make the descent as wide as possible, so as to give a larger choice. All men of this clan are called *mwae raha* or *mwane raha*, literally "great man," usually translated "chief," but they are only possible chiefs, not all of them are actual chiefs. All men of other clans are called *mwae taa* or *mwane taa*, "people of no importance." So all women of the Araha clan (possible mothers of chiefs) are called *wagi raha*, "highborn women," and all other women (of other clans) are *wagi taa* (the translation of the *Nunc Dimittis* makes S. Mary call herself *wagi taa*, though she was of course *wagi raha*). The choice of chiefs is made much wider by adoption, as a boy may be adopted into the Araha clan or brought into the clan by giving a series of feasts. In fact anyone may become a chief in these ways, though the born *mwae raha* have a distinct prestige. Marriage within the Araha clan is shown by pedigrees to be very common, and evidently not in recent times only, but equally so three or four generations ago. Dr. Codrington's derivation of *mwaelaha*, chief, is quite incorrect.¹

¹ *The Melanesians*, p. 51, note.

I feel the greatest respect for all Dr. Codrington wrote. In a former paper, "Beliefs and Tales of San Cristoval," our statement that there was no patrilineal descent in San Cristoval was too dogmatic, as this paper shows, and the region where there is partial patrilineal descent and traces of the ideas of people who practise it, is the region which was best known to Dr. Codrington, West Arosi; so that his statements in *The Melanesians* only needed qualification, though it was strange that he overlooked the exogamous clans. Another supposed error of his, referred to in that paper, was the misnaming of the drawing of a San Cristoval *adaro* by calling it the drawing of a Mota *tamate*, but I think that very likely that was the error, not of the author, but of the Fijian editor of the paper in which the mistake was made. At all events, Dr. Codrington's errors are very few and far between, and he holds a unique place among writers on Melanesian philology and anthropology, building as he did a sure and lasting foundation for our knowledge of both; and it is in no critical spirit that his derivation of *mwaelaha* is referred to.

3.—*Arosi Clans.*

In most Arosi villages only two or three clans are represented, but in large ones like Wango there may be as many as ten or twelve; I therefore take Wango itself as an example of the state of things found generally in Arosi, and give the Wango clans with their totems. At the time the names were obtained there were ten clans, as follows :—

- | | |
|-----------|------------|
| 1. Atawa. | 6. Araha. |
| 2. Amwea. | 7. Aoba. |
| 3. Mwara. | 8. Amaeo. |
| 4. Bora. | 9. Kāhuko. |
| 5. Bwao. | 10. Adaro. |

1. *Atawa* is often identified with the fifth clan, *Araha*. The meaning of the word is not known to the people, though I shall come back to it when describing the Bauro moieties. The totem at Wango is a small bird called *tahitahi marada*, which may not be killed or eaten by members of the clan. Nowhere in Bauro has *Atawa* a bird totem (*Atawa* is one of the two Bauro moieties).

2. *Amwea* is the name of the other Bauro moiety to be referred to later, and it and *Adaro* are the only clans at Wango which have, as far as one could learn, no totems and no restrictions of any sort.

3. *Mwara*, the name of the first people who came in the canoe, and of the island called by us *Malaita*, from which they had immediately come. The kingfisher, *warure*, is the totem of the clan. At the western end of the island the *Mwara* clan have also the hawk, *tehe*, as their totem, but this is, I believe, really the totem of the second and recent immigration from *Mwara*, who have patrilineal descent.

4. *Bora*, a clan which has the pigeon, *waibora*, as its totem.

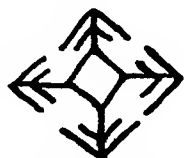
5. *Bwao*, who have as their totem a long-legged swamp bird called *pwao*.

6. *Araha*, a clan that is often identified in this part of Arosi with *Atawa*, the superior of the two Bauro moieties. *Araha* means lord or master, and is the clan of the chiefs. The children may be *Araha* if either father or mother is *Araha*, and often both father and mother belong to the clan. Many children are adopted into the clan; and also, by giving an elaborate series of feasts through several years and expending in this way a great deal of money, a man can initiate his child, so that the child becomes *mwae raha*, i.e., a man of this clan, and thus a child is either (1) born into it through father or mother, (2) adopted into it, (3) brought into it by his parents giving a series of feasts. To give a series of such feasts is called *ha'a mwaeraharaha* the child, i.e., "to make him a great man." Only the members of this clan, all of whom are *mwae raha*, can use certain tattoo marks, the *kaura*, or frigate-bird, and the *bwari*, or large house-spider, which does not make a web (one *bwari*, however, makes a web and agitates it violently if disturbed). These tattoo

marks are, I believe, called *usu*, whereas the ordinary tattoo marks, stars, evening clouds, trees, fish, and so on, are called *rabu*—a word also used for the sun as a tattoo mark. The *kaura* is marked on the cheek, its conventional sign being given below, while the *bwari* is made on the forehead,¹ the sun on the shoulder.



1. Kaura



2. Bwari (Keweb)



3. Sina

Much more might be written about the chiefs, but it is hoped to do so in another paper. This clan has as its totem the eagle, *hada*, and in the western part of Arosi it is called by its totem name, as well as by its other name, *Araha*.

7. *Aoba*.—This clan has for its totem a blue bird with long red legs, called *kaopwa*.

8. *Amaeo*.—This clan is unique in Arosi, as it is the only clan which has subdivisions, the two portions of Amaeo being called the Great and Little Amaeo. It has also two totems, a crab called *rihoriho amaeo* and an owl called *ngai*, and it is the latter which is carved on the sacred bowl, or *dara manu* of the clan. Sacrifices seem to have been offered regularly to this bird.

9. *Kahuko*.—This clan has the owl called *kahuko* for its totem. It is sometimes identified with Amaeo.

10. *Adaro*.—This clan has, like Amwea, no totem.² The word means a ghost, and is said to have originated with a woman who rose from her grave. It is identified sometimes with Mwara, but perhaps because it is said to have come from Malaita, where it is the name of one of the Saa clans (under the Saa form, *akalo*).

Another name for clan in Arosi is *huo*, *burunga* being used more loosely for clan, or ancestor of the clan, or totem. The clans are also called *kumu* in Arosi and

¹ The *bwari* (as a lozenge merely \diamond) is found on the heads of babies, their heads being shaved so as to leave this mark, the portion unshaved, from front to back of the head.

² But I was told by one native that it was not proper for the people of this clan to eat sacrifices to ghosts: this seems improbable.

on the Bauro coast. In Guadalcanar *kema* is a clan, in Florida *kema* is clan and *komu* village. In Malaita *komu* sometimes means island, and sometimes clan, as at Saa. The three little tufts of hair sticking up from an Arosi child's head, like three little islands, are called *kumukumu*. These words, perhaps, are all originally from the same root.

All the clans except Amwea and Adaro have, it will be seen, bird totems. Atawa and Amwea, the names of the two Bauro moieties, will be referred to again, but it may be noted that Atawa is identified with Araha and Hada in Arosi and with Mwā (snake) in Santa Anna; while Amwea is often identified in Arosi with the clan found in the west of Arosi called Mwā, whose clan bowl is figured above. This identification is made elsewhere in San Cristoval, and in Bauro (the home and centre of the snake worship) it is sometimes said that the moiety Amwea should not kill a snake, and even that the snake is their totem.

Another clan in Arosi not found at Wango is the Urawa (Ulawa), which has the parrot, *diwi*, as its totem.

4.—*The Relationship System.*

The relationship system is simple and typically Melanesian, not unlike that of Mota, which is given by Dr. Codrington in *The Melanesians*, except that there are a number of clans instead of two moieties. A child belongs to his mother's clan and necessarily marries a member of some other clan, and then all the members of these two clans are his relatives (though there is no word quite corresponding to the Mota *sogoi*) either by birth or by marriage. But in a general sense so are the members of the other clans with which he is not directly connected. Roughly, the people are classed by the generation in which they stand. Those of the father's generation are classed with the father, unless they are of the mother's clan; the father's sisters and mother's sisters are classed with the mother. So all the children of a man's own age are classed with his brothers and sisters, unless they are the children of those classed with his mother's brother. This classificatory system seems simple, yet it is hard for an Englishman to think in terms of it: he cannot resist using English words such as father, brother, sister, as equivalents for native words, which they are not, and he has a feeling that the word used for father is only loosely used when it is used for other men of the father's standing.

However, when once mastered, the system is simple enough, and it should be possible to give the native terms for all the people named in a pedigree. Yet for months I found this impossible: the terms used seemed to be often quite different from what I should have expected, and not to be predicted beforehand. It was long before the reasons, or at least the chief reason, for this dawned on me, and perhaps I should still be puzzling over it had not Dr. Rivers' stimulating and puzzle-dispelling book, *The History of Melanesian Society*, come my way. But perhaps the difficulty might have solved itself, for one could not fail to notice that it was almost always

the terms used for the wife's relations which were so unexpected ; the reason, therefore, must lie in the marriage customs ; and further, in collecting pedigrees one came across actual cases of men marrying the wife or widow of the mother's brother or her sister, and of women marrying a generation above them (the father's brother). Then, finally, by direct enquiry about all the married people in a village, I discovered that about half the men and women who were married in Arosi had married either a generation above or a generation below their own, at any rate in the case of the first wife or husband, and that in some cases a man had married a woman two generations above him, a woman whom he classed with his father's mother, when using a native term for their relationship. With this key many puzzles were speedily unlocked, and these marriages were evidently the principal reason for my bewilderment.

Other reasons, however, also existed, causing complications in the use of terms. Both polygyny and polyandry are common in the heathen villages, but often only one wife or one husband was named by my informants.

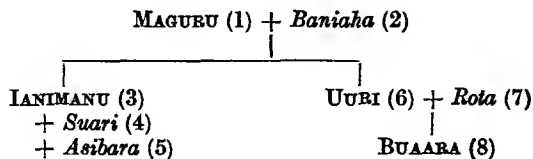
Again, a person after marriage stands in a double relationship, that which he held before, and that in which his marriage has placed him. Such a person is called *soirua*, "two names," and informants will sometimes give one term and sometimes the other, and sometimes say "my *soirua*."

Also natives make mistakes, even though they understand the classificatory system so much better than we do, and especially is this the case if there are two persons of the same name in a pedigree. Sometimes a term used that puzzled one in studying a pedigree at leisure was simply a mistake on the part of the informant.

But next to the marriages into another generation, the most prolific source of error or of difficulty is the native custom of adoption. Adoption is very common and puts a person into the actual place, as it were, of those born in these relationships : a boy adopted is considered the real son of the man who adopts him, just as much as one born to him by his wife. The woman who cuts the umbilical cord, and who shaves the head of the baby, is the baby's mother henceforth. Children bought become the "real children" of the man who buys them—again a difficult point of view for an Englishman, who insists that these are not "real children" at all ; but when a man is giving a pedigree he makes no distinction between adopted children and those born to him. Yet in using relationship terms he may think of the relationship in which the boy stood before he was bought, and give that, or sometimes that and sometimes the new relationship. Moreover, people are not merely adopted as sons or daughters, but also as fathers, mothers, grandfathers, and grandmothers. A boy may be adopted to take the place of a man's father and keep his memory green ; the father's name is given to him, and he takes *his* standing : he is classed as grandfather to boys of his own age or even older than himself. The unusual marriages, helped perhaps by this system of adoption, have made it now impossible to tell

from a person's age in what generation he stands : one classed as your father may be of your own age, a brother may be as old as your father.

An actual example of adoption may perhaps make the difficulties connected with it clearer :



Buaara (8) is a Heuru man, but he was born in the bush near Rumatari, fifty miles to the east, where for some time his name was Horihori, and his father Mwaerahanihaa. He was bought and taken to Ngorangora, twenty-five miles from his home, and lived there for a short time with his new father, Wotagai. He was sold again to a man named Warumu in Ugi, but before he had time to learn the names of his new relations, Warumu sold him to Uri in Heuru. When I first got the pedigree, Buaara told me simply that Uri was his father, and Rota his mother. But this was not the only case of adoption in this short pedigree. Baniaha (2) was only the adopted mother of Uri, yet she had so taken the place of Uri's mother that Buaara said Uri came from the womb of Baniaha. As Baniaha had already a husband called Maguru (1), the said Maguru became Uri's father. Uri is considerably older than Baniaha and Maguru. Uri calls Maguru father-in-law because Baniaha was, before adoption, the mother (in a classificatory sense) of Rota. Buaara calls Maguru either grandfather or brother-in-law, the latter term depending on the fact, as explained to me, that if a man adopts a woman as his mother and a man as his son, these two have the sister-brother relationship towards one another. Buaara calls Baniaha either sister or grandmother, and Ianimanu (3) father, but of the latter's two wives, he calls the first, Suari (4), mother, but the second, Asibara (5), grandmother. Ianimanu has, no doubt, married a woman he calls *ina* (mother) in marrying Asibara, and therefore Buaara calls her *wae* (grandmother). This short pedigree is given as an example of how adoption and anomalous marriages lead to an apparent confusion in the relationship terms. Buaara, when I first took down this pedigree, did not tell me of the adoptions in it, nor did it occur to him that there was anything unusual to explain.

5.—*Arosi Relationship Terms.*

The relationship terms are as follows :—

1. *Kauwa, wauwa, uwa, uwai*. The first and second are the Wango forms, the third general and the fourth West Arosi. A male two generations above or below (grandfather, grandson).

2. *Kawae, wae.* The first is the Wango term, the second the general Arosi term. *Kawawae* is used at Makira Harbour. A female two generations above or below (grandmother, granddaughter).

These words are also used for those of previous generations and for ancestors generally, but the first parent of the clan is called *burunga*.

3. *Hasiwae*, a word meaning usually old woman or very young girl, also used for grandmother and granddaughter, and in East Arosi often used for wife. *Hasi* is a prefix to many words, often giving a depreciatory sense.

4. *Asi Kare.* This is really a Bauro term, but is used at Bia for a grandchild of either sex, the "possessive" pronoun being added to *asi* (*asiku kare*, my grandchild). The meaning literally is child- or little-younger-brother (sister). In Makira Harbour *wasi kare* is used for male and *asi kare* only for a female.

5. *Ama*, a male of the same generation as the speaker's father, but not of the speaker's clan (father, uncle).

Gereama, "little father," may be used for one not actually the father.

6. *Mau*, a male of the generation above, whom the speaker's mother calls *haho* (brother); and of her own clan, and reciprocally a male or female of the generation below, children of a woman the speaker calls *haho* (sister), and who is a woman of his own clan, but not of other clans (uncle, nephew, niece).

There is also, in West Arosi at least, and probably in East Arosi, an extended use of *mau* for the children of the mother's daughter; reciprocally for the mother's cross-cousin.

7. *Ina*, a female of the generation above (mother, aunt).

Gereina, "little mother," may be used for mother's sister, father's sister, etc.

8. *Doora*, one of the same generation as the speaker, and the same sex (brother, sister, cousin).

9. *Haho*, one of the same generation as the speaker, but the opposite sex (brother, sister, cousin).

10. *Asi*, the West Arosi word for *haho*, which latter in West Arosi means cross-cousin of opposite sex, child of one whom the speaker calls *mau* (mother's brother).

11. *Kikii*, the East Arosi term for cross-cousin; son and daughter of *mau*.

12. *Gare*, one of the generation below of either sex (son, daughter). In parts of West Arosi, the children of the mother's brother are often called *gare*.

13. *Bwauodo*, the actual brother of the speaker's actual mother.

14. *Areha*, in East Arosi (1) the wife of the mother's brother; (2) the husband of the sister's daughter; (3) the wife of the sister's son, i.e., the wife or husband of the *mau*. In West Arosi, the second (much younger) husband of the speaker's mother (aunt, son-in-law, mother-in-law, step-father).

15. *Mwane*, husband (the common word for "man," "male.")

16. *Urao*, wife (the common word for "woman," "female").

In some bush villages the usual Melanesian word for woman, *hehene*, is used, and *ura* means a harlot.

17. *Wai*, husband or wife.¹

18. *Waiha* or *iha*, a relation by marriage of the same generation and the same sex as the speaker, i.e., wife's brother, husband's sister, sister's husband, brother's wife (brother-in-law, sister-in-law).

19. *Mwarii*, a relation by marriage of the same generation as, but opposite sex to, the speaker (brother-in-law, sister-in-law).

20. *Hungo*, a relation by marriage a generation above or below of either sex (but in West Arosi only of the opposite sex to the speaker) (father-in-law, mother-in-law, daughter-in-law, son-in-law).

21. *Ahoro*, in East Arosi a wide term combining *iha* and *mwarii*; in West Arosi a relation by marriage a generation below or above of the same sex as the speaker.

22. *Soirua*, a term used for one who can be called by either of two relationship terms.

23. *Marahu*, a namesake or friend; a person with whom one has exchanged names; a person with whom one has exchanged wives.

Ngautangusi is a term applied to each of the group of four where wives have been exchanged, the explanation given is that in cooking *tangusi* (cabbage) it is stirred round and round. Evidently the custom was not uncommon, though the people now speak of it with a blush.

There are two sets of "possessive pronouns" in Arosi: (1) the personal pronoun following the noun, usually showing close relationship (parts of a whole: arm, leg, seed, leaf, etc.); (2) the pronoun suffixed to a "possessive noun" following the noun.

(1) *gu*, my; *mu*, thy; *na*, his, etc.

(2) *agu*, my; *amu*, thy; *ana*, his, etc.

In the case of the terms given above, some take the first and some the second set of possessives.

1st set: *ama*, *ina*, *gare*, *doora*, *haho*, *asi*, *wai*, *iha*, *mwarii*, *hungo*, *aharo*, *areha*, *marahu*.

2nd set: *mau*, *uwai*, *wae*, *hasiwae*, *mwane*, *ura*, *kikii*.

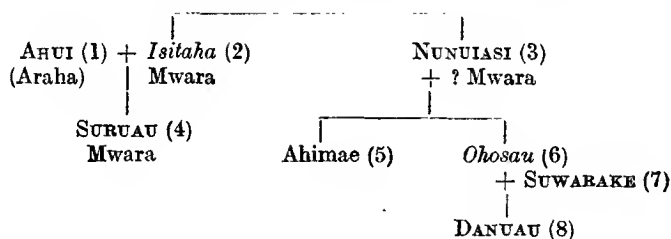
Gare takes either; some say *gare ana* means a bought son; *aosi ana* (his orphan) is also used for one bought.

6. *The Use of Mau in Arosi.*

At first it seemed to me that a trace of patrilineal ideas was certainly to be found in an extension of the use of *mau* to include members of the father's as well as the mother's clan. A man calls a woman of his own generation his sister, and

¹ Cf. Fiji *wati*, sometimes shortened to *wai*.

if she is of his own clan, the children are *mau*, but if of another clan *gare*: and this, of course, is regular; but in West Arosi, if not in East Arosi, a woman of the father's clan is also sometimes called sister in this closer sense, and her children *mau*, while it is only the children of women of other clans whom he calls *gare*. Thus Haamori of Onetere is Amaeo (by his mother), but his father is Araha, and the children of an Araha woman of his own generation living at Heuru are called by him *mau*; ¹ so Monongai of Heuru is Mwara and has *mau* who belong to two clans: Mwara, and Amaeo, his father's clan; and he has married a *mau* of his father's clan. So it comes about that though men frequently marry their *mau* (niece), and this is now a very common marriage in Arosi, they do not marry within their own clan. The latter is thought to be wrong, and when a man informs you that he has married his *mau*, he is always careful to add, "but of another clan"; always his father's clan I supposed, but later I found a case in a pedigree of a man marrying a *mau* who was not of his father's or mother's clan. I could not explain it, but still thought this extended use of *mau* seemed to point to the introduction of ideas by a people with patrilineal descent, but that where, as in Arosi, there are many clans, the man still marries out of his own clan. However, the use of *mau* in this way has, I think, another explanation, and comes from treating the *haho*, cross-cousin, as an actual sister, and so calling her children *mau*, and reciprocally the mother's cross-cousin will be *mau*, as shown in the following short pedigree from Tawatana:—



In this pedigree 4 calls 8 *mau*. The clans were not known, nor the name of Nunuiasi's wife, but evidently Danuau is called *mau* because he is the son of Ohosau 6, who is called *haho* (used in Wango for actual sister, but here for cross-cousin of opposite sex). In the dual society this *mau* would be of the same moiety as the father and would be the father's brother; but in the case of a society including a number of clans this is not necessarily the case. In the first cases I noticed the *mau* was of the father's clan and *mau* therefore stood for father's brother or mother's brother; and it seemed natural to refer this use to patrilineal ideas; but this explanation did not cover all the cases and it is plain, I think, that the use is a result of the cross-cousin avoidance, and the treatment of the cross-cousin as actual sister. (This has since been confirmed by further enquiry.) This is not to be confused with the Bauro use of *mau* for the son of the mother's sister's daughter (for there they are still of the same moiety); here it is the son of the mother's brother's daughter.

¹ His father being Araha complicates this case.

The interesting point about the Arosi marriage with *mau* is that where cross-cousin marriage is strictly forbidden, marriage with the daughter of the cross-cousin is common; and also still occurs with the "mother" of the cross-cousin (as a second wife).

7. *Anomalous Marriages in Arosi.*

In the Arosi pedigrees the reason for the terms given is often not apparent. When first I began to collect pedigrees I used to let them lie for some months and then from the pedigree alone try to write down the correct relationship terms. I found that I never got these as my informants had given them to me, and yet I felt sure I had mastered the system of terms and knew their meaning. I then noticed that in far the larger number of cases where my terms did not correspond with those given to me, this was on the side of the man's relations by marriage; about the same time I noticed some actual cases of anomalous marriages, such as with the mother's brother's widow or one of his wives or his wife's younger sister and of a man with his "daughter," and I found such marriages were very common; and having read lately Dr. Rivers' *History of Melanesian Society*, the cause of my difficulties became apparent. These marriages had not had the effect of altering regularly the terms for relationships, either because they were not common enough or for other reasons; though in one case at least they had done so, just as at Mota, for in West Arosi a man being the future husband of his uncle's wife, called his cousins his "children" quite regularly. But they had the effect of altering the terms used in each individual case, so that even with this key to the understanding of the pedigrees after the terms had been obtained, it would still be impossible to write down the terms for oneself without previous knowledge of the marriages of the persons in the pedigree, whether they had married in their own generation or above or below one or two generations. Obviously no outsider without this knowledge could hope from the pedigree alone to get the terms correctly, but with the pedigree and terms given he could work out with some difficulty what marriages had taken place; and this will be found to be an interesting exercise. I then began the practice of writing down the names of all the married people in a village and enquiring directly in what relationship they stood before marriage.

I give some examples of the result of this analysis. At Heuru, out of 15 married people—

- 9 have married *asi* (1 *haho*, cross-cousin), i.e., a woman of their own generation.
- 3 have married *mau*, "sister's daughter" (but none of the 3 *a³mau* of their own clan).
- 3 have married *gare*, "daughter."

At Bia, out of 13 married people—

7 have married *haho*, i.e., in their own generation.

4 have married *gare*, "daughter."

1 has married *mau*, "niece."

1 has married *ina*, "mother."

At Adoaioo, a bush village, out of 10 married people—

4 had married *asi* (in their own generation).

3 had married *gare*, "daughter."

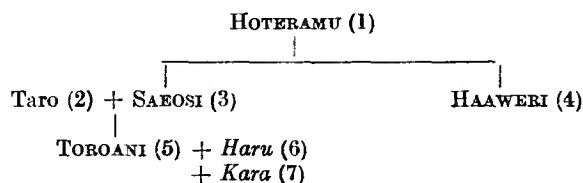
1 had married *ina*, "mother."

1 had married *mau*, "niece."

1 had married *wae*, "grandmother."

These are examples, and fairly typical ones. Generally speaking, about half, but rather more than half, the marriages in Arosi are between people of the same generation. Marriage with *gare* or *mau* is now next common, but marriage with *ina* is fairly common also. Marriage with *wae* (mother's father's sister, a potential wife of the father's father) is not so very uncommon, and I have met with a good number of instances of this marriage at the present day. I have not met with any case of a man marrying his *wae* two generations below (daughter's daughter). Similar marriages in Bauro will be referred to later.¹

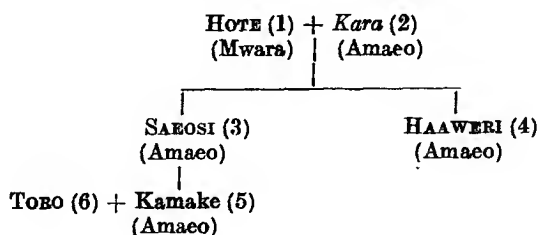
Marriages such as these explain, perhaps, the varying use of the term *areha* in Arosi. It will be remembered that in East Arosi *areha* means (1) the wife of the mother's brother, (2) the wife of the sister's son, (3) the husband of the sister's daughter. But in West Arosi it is used of the stepfather, the mother's second husband. After the father dies the mother marries again a much younger man, about the same age as her son (so I was told), and he is called *areha*. This might be the result of a marriage being common in which a man married his *wae*, "grandmother."



The above is an actual pedigree from a small bush village. Toroani (5) calls Hoteramumu *aharo* (brother-in-law), no doubt because Toroani's second wife, Kara (7), is also his grandmother, *wae*, Hoteramumu's "sister." By his first wife, Haru, Toroani has four children, but none by Kara, who was a comparatively old woman when he married her. Haaweri (4) would call Kara (7) *areha*, because she is the wife of his *mau*; though she is not actually his mother, she is *ina* to him (father's sister). In a

¹ A wider analysis would show, I think, more marriages between [a man and one he calls *ina*.

similar manner it is possible that his actual *ina* might on his father's death marry a man who has married Haaweri's *mau* (sister's daughter), and who would therefore be of a different clan to Haaweri and his mother; her new husband would before the marriage have been her grandson, and if his father were the *doora* of Haaweri, but considerably older than he, the second husband might be about the age of the son. This will be clearer with the following imaginary pedigree—



Toro (6) will call Kara (2) *wae*. Toro also, by marrying Kamake (5), will become *areha* to Haaweri (4). If, then, Hote dies and Kara becomes Toro's second wife, Kara's second husband, a much younger man than Hote and perhaps about Haaweri's age, will be still his *areha*. Such marriages may have been commoner in the west of Arosi than in the east, and even if they ceased the name *areha* might remain for the second and younger husband of the mother. At least this seems a possible explanation. *Ahoro*, which is a general term in East Arosi for a relation by marriage of the same generation of either sex (*ahoro* also means a marriage feast), has been specialised in West Arosi to mean a relation by marriage of the same sex a generation higher or lower, the father of the wife or the husband of the daughter. If a man marries a woman he calls *ina*, a woman she calls *gare* (daughter) would before marriage have been his sister, and his daughter's husband will be of his own generation; if he marries a woman he calls *gare*, a man his wife calls *ama*, father, before marriage will be a man he calls brother, so that it would be natural to use *ahoro*, formerly a relation by marriage of his own generation, for his wife's father or his daughter's husband. But this would seem to apply equally to relations by marriage of the opposite sex, for whom *ahoro* is not used, but only *hungo*, which in East Arosi means a relation by marriage one generation removed of either sex.

In some parts of West Arosi the children of the mother's brother are called *gare*, being put a generation lower than their true place, probably because marriages with a wife of the mother's brother or his widow were very common; they are fairly common still, though marriage with the younger sister of the mother's brother's wife is usual. Marriage with the father's brother is common, not, however, the actual brother of the father.

These anomalous uses of terms seem to be found chiefly in West Arosi the East Arosi terms are used more simply. But evidence does not show marriages in a higher or lower generation to have been less common in West Arosi. In all the

pedigrees the terms will be found to have, or appear to have, varying meanings, but this is due to the marriages made in each particular case. In the cases noted above the meaning of *areha*, *aharo* has actually altered, *hungo* has been contracted in meaning and *gare* enlarged; *haho* has been specialised and *asi* added in West Arosi.

8. *Avoidance, and Mutual Duties of Relatives.*

Common to all parts of Arosi are restrictions upon the intercourse between actual brother and sister. This is natural as they cannot marry, and free intercourse means possibility of marriage; the restrictions are not nearly so severe as in Bauro. But in Arosi these restrictions are extended to cross-cousins (who marry in parts of Bauro), though there seems on the surface no reason why they should not marry, as they are not of the same clan. Yet it may be that these restrictions indirectly stop marriage between near relations. It is usual for a woman to marry a man she calls *ama*, and if this *ama* were her actual father's brother and then later she married her husband's sister's son (apparently these two marriages are frequently made in this order), this would be a marriage between cross-cousins; but if cross-cousin marriage were impossible, so would be the marriage with the actual brother of the father. At any rate in Arosi a boy must never speak to his cross-cousin: if he wants something from her he must get a friend to go and ask for it; he must never play with her; if they meet by chance on a path she will step aside into the bush to let him go by and they must not look at one another; he must never take food from her even if he is hungry, nor must he eat food she has cooked; if she is in a house he does not go in, but stands near the house, and when she observes him she goes out and then he can enter; he must not go on a voyage with her in a canoe or boat, and he must be very careful never to touch anything of hers—her bag, her lime-box, her sleeping mat, or to tread upon the last. The meaning of these restrictions is quite plainly seen when it is remembered what the mark of betrothal is in Arosi. If a boy feeds a girl and she eats the food this is consent to marry, and if afterwards the girl wishes to marry someone else, half a fathom of white shell money must be paid: in the case of young people it is only half a fathom, with older men and women a whole fathom; and exchange of bags is a public sign of agreement to marry. So cross-cousin marriage is very carefully and strictly forbidden.

No doubt there are special functions for different relatives, but I know little of them.

The *mau*, mother's brother, stands in a very close relationship to his sister's children. When he dies they share the property, though some of it goes to his brothers. A boy will marry his uncle's widow or her younger sister. He is expected to work in his uncle's garden, and may freely take of his uncle's possessions. If a boy wishes to go to school or to recruit on a plantation, the uncle's permission is asked. If he wishes to marry, he looks to his uncle to make the arrangements for

the purchase of the woman he desires for his wife (from £8 to £10 is the price nowadays in Arosi). The uncle takes a part in the series of feasts made for small children, including that at which the name is given, and in the initiation of boys. When the actual brother of the mother dies, his nephew shaves a line across his head from ear to ear. The relation between the two is a free one: there is no constraint, they joke with each other.

A widower (*marugu*) shaves the whole of the back of his head when his wife dies, giving him rather the appearance of a crested cockatoo. Some young fellows at Wango did this lately because their uncles either could not get them wives or were lazy about doing so, and the result was very satisfactory from their point of view.

A widow (*nao*) shaves her head completely for a month, and then allows horizontal bands of hair to grow one at a time till her head is again completely covered. This is also done by a widower. They also fast, *haariri* (widow and widower). The widow eats nothing at all for ten days, and then only coco-nuts for a month, after which the fast is gradually relaxed, but nevertheless lasts twenty years! or until she marries again. The children merely fast from some particular food for a time. A widow goes about in a crouching attitude, covered by a kind of cowl of plaited *bwana*; that of a widower is formed by a number of broad leaves of a plant, *ha'u*, sewn together and held in cowl shape over his head and covering his whole body. Each also wears strung round the neck long strings of small black striped gastropod shells; if the husband was a *mwae raha*, the widow wears these round her ankle also. A widower does this too, only wearing the shells round his ankles if his wife was a *wagi raha*.¹

For two or three weeks after the birth of a child the father guards himself carefully from the sun and from the cold wind which comes up nightly from the river valleys, and from the rain. He is careful to do no heavy work, and especially not to carry anything heavy.

When children wish to marry, the first child is at the disposal of the father, the second of the mother, the third of the father, and so on. Their consent must be obtained, but only in the case of the children in which they have this special interest. If the second child is married, the father is not asked for his consent. This applies equally to boys or girls.

Polygyny is common, but though there may be five or six wives, two is the usual number. Polyandry is also common, if it can be called true polyandry; a man gives money and goes and lives with a married couple. Often, it is said, he has no access to the woman, and lives with them merely to have someone to cook for him and help in the garden work; but if he wishes to have access to the woman, he may do so on payment, and will have children by her. In some villages there

¹ A picture of "Widows Mourning," in Newton's *Far New Guinea* (p. 220), might represent Arosi widows.

are three or even four men living thus with a woman, but never more ; and all the children born are considered to be the children of the first husband.

Is the physical fact of fatherhood recognised ? At the present day probably it is. If the reason be asked for the custom of burying alive the first-born child, who is called *ahubweu* or thickhead, the almost universal reply is that this is because the child is not likely to be the man's true child, but born to the woman by some other man. But there are certainly a number of facts on the other side ; and the embryo (*hasiabu*) is said to be put into the womb of women by an *adaro* named Hau-di-bwari, who lives on a mountain in Marau Sound in Guadalcanar (Marau Sound is where the spirits of the dead go after death), or by Kauraha, a snake spirit, of whom Mr. Drew and I wrote in our former paper.

9.—*Apparent Confusion in the Use of Terms.*

I should like to refer again to the diversity in naming relatives which occurs in Arosi pedigrees. Suppose a pedigree is obtained at some such village as Onetere, the father's sister of the informant is perhaps called *wae* (as happened in the first I got there), and is classed with the grandmother ;¹ no doubt if one went away from Onetere with this one pedigree obtained, one would report that at Onetere a man calls his father's sister *wae*. But in the next pedigree obtained the father's sister is called *ina*. At another village the mother's father is called *uwai* in the first pedigree obtained, and in the next pedigree he is called *iha*. The varying use depends upon what marriages have taken place among the people named in the pedigrees, and as a man may marry his "sister" or his "brother's daughter" or his "father's sister" or his "father's mother," while a woman may marry her "brother" or her "father's brother" or her "brother's son" or her "son's son," and any or all of these marriages may have taken place in the particular pedigree, and each will have some effect in altering the terms used, naturally these terms will seem to put some of those named relatively too high or too low. If only one sort of marriage were taking place and it were taking place uniformly, the terms would be regularly and uniformly affected ; but as this is not the case, the result on the terms used seems at first sight merely confusion, since they have not a fixed meaning, and vary from pedigree to pedigree. However, these marriages which seem strange are after all not the normal ones ; in at any rate about half the marriages the man has married in his own generation a "sister" of another clan, and the woman in her own generation a "brother" of another clan, so that the proper value of the terms is easily obtained. Perhaps "generation" is not quite the right word to use, for such marriages as those mentioned, like a fault in geology,

¹ Perhaps from his mother having married her father's brother, so that his father's sister is his mother's mother.

have brought different strata on a level, so that children brought up together, and therefore of the same generation, are in terminology of different generations.

If we regard San Cristoval alone, there appear to be two ways in which this appearance of faults in the genealogical strata could be caused. First, they may be due to the actual marriage in the far past of people separated in age and not merely in terminology, old men marrying women really one or two generations below them, or young men women one or two generations above them. If this were long continued the genealogical strata of different generations might in time come to a level, or approximately to a level, as regards age between people separated a generation from each other. This is Dr. Rivers' explanation of such marriages in Melanesia. Secondly, the present state of things might conceivably be due to such a system of adoption as that practised in San Cristoval. It has been explained that adoption of young people is common into the place of the father and uncle. Such a system might lead to the appearance of marriages between people two generations apart, and might lead to the alteration of relative terms, as in fact it does at the present day, a boy adopted to be another boy's grandfather, but who is younger than his grandson, being actually called brother or grandfather.

C.—THE BAURO DISTRICT.

1.—*Bauro Social Divisions.*

The Bauro District is much larger than Arosi. The name should strictly be Bwauro, but the form Bauro has been so long in use that I have kept to the latter. (If we are to follow strictly native terms, Ugi should be Uki.) The rivers of Bauro are fairly large, and rise, like the Arosi rivers, close to the south coast (the old core of the island is found there, a core of hard quartzites and other old rocks bounded by a line of volcanic hard rocks, which form the steep cliffs of the south coast); they then flow first north-west and then north, till they come out on the north coast. Similar relationship terms follow the rivers, rather than the coast, a fact in conformity with the tradition that the Abarihurihu immigration followed the river valleys. It may therefore be the case that the central people are the latest comers. When one turns to Bauro after considering Arosi, one is in a different civilization. At first this is not very apparent, especially on the coast. When Mr. Drew and I wrote our paper, we said that "exogamous clans, generally in some numbers, with mother-descent," are found everywhere in San Cristoval, "in all the villages known to us"; and, after describing the clans of Arosi, we added, "exactly the same state of things prevails in the division of San Cristoval called Bauro. For example, at Rafurafu there were formerly, as the older people remember, eleven clans, *kumu*: Atawa, Amwea, Uraua, Mwara, Adaro, Aopa, Pagewa, Fari, Kari, Kafiko, Araha. Here, however, all have died out except the first three. This state of things prevails at Fagani, Mwanihuki, Rumatori, on the

coast, and in the bush villages, and in fact everywhere where we have been able to make enquiries." We added, indeed, that "Atawa and Amwea seem to underlie the other clans," but my own belief at the time certainly was that Bauro did not differ much from Arosi in social organization. In 1915 I wrote a paper for the *Southern Cross Log*, which was printed in 1917, and by that time had modified my opinion, or rather reverted to my earliest impression, that this was a dual region, for I wrote: "The Bauro people have not a number of clans like the Arosi people: in most places there are only two, called *kumu* or *waru i nuni*; one of these is called Atawa and the other Amwea. Sometimes, however, there are other clans, the same as the Arosi ones—the shark clan, the octopus clan, and so on; but they are always spoken of as subdivisions of Amwea or Atawa, and often where they once existed they have died out now. The real division of society in Bauro is into Atawa and Amwea." That fairly represents my present opinion, except that it was an error to write that the Bauro clans are the same as the Arosi ones: some of them are, but these are seldom found; and the two I gave as examples, the shark and octopus, are not Arosi clans at all.

Of the Rafurafu clans mentioned (Uraua, Mwara, Adaro, Aopa, Kafiko, and Araha), Mwara and Uraua are both found elsewhere in Bauro, but only Uraua is common. Pagewa (shark), Fari (ray), Kari (octopus) are found to the east, and Pagewa is common everywhere, even occurring in some bush villages and at Ulawa. In Bauro peninsula itself there are now four clans, Atawa, Amwea, Uraua, and Araha, but at most villages only the two first. At Fagani the same four are found. On the south coast at Marogu (just over the Arosi border) the same four clans are found, and also Mwara, Aopa, Bora, and Ataro. But going east, at Pwepiau, a bush village near the shore, only Atawa and Amwea are found. This is the case also at Parigina. At Haununu Atawa is also called Arata, and besides this Amwea, Uraua, and another clan called Maroa, are found. Between there and Santa Anna, Atawa, Amwea and Maroa are the clans. In the bush villages, however, especially in the centre of the island, I have so far never found any clan except Atawa and Amwea, which are always present, while on the coast the other clans are frequently called divisions of these two. The position is, therefore, that on the Arosi border of Bauro some of the Arosi bird totem clans are found; in the middle of Bauro, along the coast, some of the Arosi clans and some of the eastern (Santa Anna and Kahua) aquatic totem clans are found (this applies to both coasts); at the east border of Bauro only the aquatic totem clans are found. In all cases Atawa and Amwea are present, and in the central main mass of the island in the interior, usually, at least, only these two are present. I believe also that if a census could be taken, five-sixths of the people at least (if not more) would be found to belong to Atawa and Amwea. It is difficult to make others at a distance feel the force of one's sense of a social atmosphere, but I would say emphatically that the social atmosphere of Bauro is that of a dual community. Atawa and Amwea are the only divisions

of importance in native estimation; they are the real basis of society, and Bauro is at least as dual in character as Mota. I doubt whether any clan except these two is at all widespread. Araha is identified with Atawa, or called a subdivision of it, as Uraua and Pagewa are of Amwea. The other clans have only a few people here and there, and their presence, I believe, is more likely to be due to the occasional purchase of wives from a distance, which has always taken place, than to any considerable settlement of totemistic people along the Bauro coasts; or the totemistic people may have settled along the coast only.

2.—*Atawa and Amwea.*

But there are some good reasons for thinking Atawa and Amwea both different from and older than the totem clans of the two ends of the island.

If the names of the clans are observed it will be seen that they fall into three classes: (1) names of animals and birds, by far the most common; (2) names of places: Mwara, Ulawa; (3) names with a definite meaning attached to them: *Araha*, "great," the chiefs' clan; *Adaro*, "ghost" (these are the only two examples of this third class). This last is a clan that came from Malaita; but Atawa and Amwea are not, so far as is known, the names of any bird or animal or place, nor do the people themselves attach any meaning to the names, though doubtless they have a meaning, so that they stand apart.

These two have no totem, and these two alone. Every other clan has a totem and restrictions connected with it. It is true that in one place in Kahau, Atawa, it was said, could not eat the pale yellow coco-nut, but it is rare to hear of any such restriction. Amwea are sometimes identified with Mwā (snake), and then are forbidden to kill or eat the snake and sacrifice to it, and where Amwea are not identified with Mwā there is occasionally a vague belief that the clan has something to do with the snake, but I think there may be a reason for this, to which I shall return later. Generally speaking, it may fairly be said that these two clans have no totems, and in this, too, they stand alone.

These two clans alone have traditions of hostility to one another. In Bauro many places are pointed out near villages which were the regular meeting places for fights between Atawa and Amwea; there is one such at Haununu between the point and the village of Irafua. There were formerly regular clan fights between these two, and the tradition of hostility between the two moieties is very full and universally held in Bauro, and is based on real or supposed physical and mental differences between the moieties. It is said that Atawa people are "bitter" in character, a somewhat vague expression, and at the same time more gentle than Amwea and cleverer; and they are also more talkative, while Amwea are silent and morose, fierce, and fond of fighting. Atawa are fair and Amwea dark. The marks on the palms of the hands, and the shape and size of the feet, are different. Atawa have

three lines on the palm and small feet and hands, while Amwea have four lines and large feet and hands. Atawa are said to be the superiors and to stare boldly (I suppose that means have a confident bearing).¹

Then there are various regulations and customs relating to the two moieties, all in favour of Atawa. Thus people taken in war are enslaved, but only if they be Amwea; an Atawa must never be a slave nor must he ever be bound.²

In San Cristoval there are two kinds of buying and selling of human beings, regarded with very different feelings by the people. It is quite usual to buy boys, partly to increase one's power ("happy is the man that hath his quiver full of them, he shall not be ashamed when he speaketh with his enemy"), partly to get a useful helper in one's garden, and partly because, owing to infanticide and other reasons, families are pitifully small, and the people would die out if they did not buy children elsewhere (Malaita is a favourite market). Dr. Codrington dryly remarks that these boys "appear to be by traders called slaves, because they are bought; the people themselves call them their children"; and he might have added that they also call them their fathers, grandfathers, and uncles, since they are often bought to replace those relatives. But such buying is favourably viewed in native opinion, and the boy bought is treated in all respects as one of the family: it is simply adoption with a money payment. Nevertheless, there are real slaves, people guilty of serious offences who are sold away to places at a distance, and people captured in war. Such slaves were kindly treated, but could be killed if a human sacrifice were needed in building a new house, launching a new canoe, or at the death of a chief. Now no Atawa could be *enslaved*. This is the difference in status which strikes a native most, and about which all agree. Amwea men and women may be, but Atawa men and women never must be "bound," or "sold," or beaten or subjected to indignities. When at a feast considerable licence is allowed in the matter of women, this only applies to Amwea women. Marriages take place within the moiety, and are duly punished by death or fine or more usually by selling into slavery, but this is done only in the case of Amwea, for an Atawa who commits such crimes may only be scolded. If it should, indeed, happen that an Atawa is enslaved or illtreated or killed, all the Atawa, even from a considerable distance, come to avenge their clansman, but Amwea, though they help their fellow clansmen in their own villages in such cases, do not help those of distant villages.³ It is said villages were once divided between the two moieties as they are now in Santa Anna between the totem clans, with a path between the two portions; Atawa and Amwea kept their gardens separate and planted their

¹ But this may be a physical peculiarity. The Pakilaba of New Ireland, who seem to represent the Atawa, are said to have projecting eyebrows.

² A chief could never become a slave in Hawaii.

³ Lately at Toroa a man named Wetara struck his wife, and to avenge the insult she hanged herself. Wetara was Amwea and she Atawa, and the Atawa all along the coast took the matter up and threatened to kill Wetara, who finally paid a heavy fine.

coco-nuts in different places. If people are travelling along the narrow tracks which run through the forest it is a traditional saying : " Let the Atawa go first and the Amwea follow them." There is a curious custom among the children : if two or three children are playing, all perhaps Amwea, and an Atawa boy comes up, he ties a creeper round the necks of two of them, saying as he does so, "*Kumu ni tagai*," " one clan," and they must not remove the creeper till they have paid a fine of a bit of tobacco or a bat's tooth or some small present ; and an Amwea boy does the same to Atawa children. I first saw this in Rafurafu, and did not understand it till, at Haununu, a man explained it by saying that people who married within the clan were strangled (or fined), and the children, imitating their elders like children all over the world, were playing this excellent game. The children will say in sport if they find that most of those present are Amwea, " Come let us kill these Atawa, they are only a few." When they travel by canoe the Atawa should sit apart from the Amwea, just as they walk separately in the paths. And, finally, if an Amwea man adopts an Atawa boy, the boy remains Atawa after his adopted mother, who is of course Atawa ; but should an Atawa man adopt a boy who is Atawa he does not therefore become Amwea, but remains Atawa and is called " his father's younger brother." These numerous traditions of hostility based on difference of character and race, and of superiority on the part of the Atawa over the Amwea, are only found in the case of these two clans, and one fails to hear of anything of the sort among the totem clans ; if there are any such traditions among them they are not prominent. In this matter these two stand quite alone.

We must note the fact, too, that these two clans are found all over the island, and that this cannot be said of any other clan. The Santa Anna clans do not extend very far west, not even to the western portions of Bauro, nor do the bird clans of Arosi extend east much beyond the borders of Bauro, and the few Bauro clans not found elsewhere, such as the Octopus clan, are very limited in range, but Amwea and Atawa are found not only in Santa Anna, but from there throughout the island to Abauro in Arosi, and in Ugi, and even in Ulawa, Amwea and Atawa occur again.¹ They are indeed identified with other clans in certain places. In Arosi, Atawa is identified with the chief-clan, Araha, which is also called Hada, a natural identification when the superiority of Atawa in native opinion is taken into account. Where Araha occurs in Bauro it is reckoned the same as, or a division of, Atawa, but in Santa Anna, Atawa is identified with Mwā, the snake clan. So, too, Amwea is identified with Maroa in Santa Anna, but distinct from Maroa at Napasiwai on the south coast. In Arosi, Amwea is identified with Mwā (the clan identified with Atawa in Bauro), and there is some tendency to do this in Bauro, where there is no Mwā clan, by saying that Amwea should respect snakes, and has some connection with the snake ; but this and the identification with Mwā may have a natural explanation. In this

¹ The only clan comparable in its wide range is the Pagewa or Shark Clan.

identification now with one clan, now with another, Atawa and Amwea stand alone.

Throughout Bauro, too, when totem clans are found, it is very usual to class them as mere branches of Atawa or Amwea. I, myself, adopted into the Amwea clan, have been taught to regard Uraua clan people as a branch of Amwea (they originated with an Amwea woman who was carried to Ulawa in a flood). They are often called Amwea, but when it is desired to be particular are called Uraua, as it were a family within the clan. If people are not a branch of Atawa or Amwea, then they are considered foreigners like the few Pagewa (shark) people.¹ In treating other clans in this way Atawa and Amwea stand alone.

These facts show that these two, Atawa and Amwea, are viewed as different from the numerous other clans of San Cristoval. No clans have such a body of tradition of mutual hostility and of opposition in character and physical appearance, and in status in society; in fact, no other clans have any such traditions; these alone have no totemistic character, and their very names are different in character and somewhat mysterious. Their distribution all over the island, and their identification with different clans at different places, seem to point them out as the original and older people; and it should be noted that the totem clans are at the narrow ends, and along the coast, but Atawa and Amwea hold the central portion. An argument of at least equal weight is derived from the comparison of the languages of the different portions of the island; it is not possible to consider it fully here, though I give one or two illustrations. Generally speaking, it may be said that the language of Bauro appears to be an older form of Austronesian language than that of Arosi, both in its vocabulary and in its grammar. It bears much the same relation to Arosi that Melanesian languages in general bear to Polynesian. It retains older and fuller forms of Austronesian words, while in Arosi the forms are simplified and have often lost the consonants. But the differences of language make too wide and large a subject to embark on here, and the illustrations of the argument from language I would give are of another kind.

(1) *The Gong Talk*.—The large wooden gongs are characteristic of Bauro, and particularly of the bush villages in Bauro. It is only in Bauro that there is a full code of speech by gong, where there are several score of gong words. It is said that each is marked by its own beat, and there are a great many gong tunes with rhyming couplets connected with them which mean nothing in particular. But in Arosi only a few sentences are known, and I have only heard two beaten out: "Come here," and "Bring puddings"; but there are a few more (probably less than a dozen in all), and when a person dies, it is said his clan was given by the gong, though this, I think, is doubtful. The interesting point about these few sentences is that they are not in the language of Arosi but in that of Bauro; not exactly that of the present Bauro,

¹ Pagewa also is called a branch of Amwea.

but very closely allied to it. For example, "Come here" is, in gong talk (and only in gong talk), *Ragu mai*, the Bauro for which is *Rago mai*, but the Arosi is *Boi*; "Bring the puddings" is, in gong talk, *Toraia pwai susugu*, which in Bauro is *Torea pwei susugu*, but in ordinary Arosi *Waia i susu'u*. When I first heard these messages, I said to the people, "Why, you are talking Bauro!" which the Arosi bushmen with whom I was staying, whose village was thirty miles from any Bauro-speaking people, would not admit; but I reflected afterwards that probably it was not indeed Bauro, but the former language of Arosi before the bird clan people came, the language of the people from whom they got the gongs, and a little gong talk carefully treasured exactly as they got it.

(2) *Kuku Talk*.—To *kū-kū*¹ is to shout across the valleys from village to village, and there are several recognised *kūkū*, as when a child is born or a man dies. In the last case the *kūkū* is as follows: *Karena inuni aru taahi mae*; this is not Arosi, and the meaning of *taahi* is unknown, yet the sentence is Bauro, except that *taahi* is not understood there; of the rest of the sentence the Bauro equivalent is *Karena inuni aru . . . mae*, while the Arosi is *Garena i sae rau . . . mae*, the meaning being "A son of man, they . . . die." It is, I suppose, the language of the former people of Arosi, and not merely an old form of the Arosi language, though it may be that.

(3) *Language of the Pwaronga*.—In a former paper the little people or fairies, called *pwaronga*, were described, and reasons were given for thinking the accounts of them were descriptions of an aboriginal race, probably the aboriginal race of San Cristoval. In Bauro, where their talk is preserved, it is described as being in the ordinary language,² but in Arosi when their actual words are given, they are Bauro words, or the former language (as I suppose) of Arosi, for it is slightly different from modern Bauro; e.g., the fairy of the Wango tale says: "*Kakare wa! Kakone mwa tage, wauramoru!*" which Mr. Drew and I translated, "Be careful, look only, brothers!" but which might be more literally translated: "Boys! Just look up there, your brothers!" The Arosi equivalent of this is "*Ro mwane! ome moi araa, doora moui!*" Nor is the fairy's talk a mere imitation of the talk of the nearest village of Bauro, Fagani (this was a Wango tale), for a Fagani man would say: "*Kakae wa! Kokone mwa tage, wasimoru!*" I suggest that the present Arosi people adopted the fairies (called *pwaronga*) when they settled in Arosi, and so these fairies still talk the old language of the place.

(4) *Language of Charms and Children's Games*.—Some of these are in Arosi, but some appear to be in a language very like Bauro. Of course it is possible that this is only an archaic form of Arosi, which happens to be like modern Bauro, but it seems more natural to explain the likeness to Bauro by supposing that the charms

¹ Rev. W. Ivens says [this word] in Ulawa is the Australian word "cooe" in native dress. In San Cristoval it certainly has nothing to do with the Australian word.

² Though some say their language was an utterly foreign language, not like any now known in San Cristoval.

and games were learnt from a people similar to the Bauro people, among whom the bird clan people settled; such things as charms and game songs are carefully learnt in their original form. Many are quite like modern Arosi, but many again are in a language like modern Bauro, the same language as that of charms and songs of Bauro at the present time. A few charms and songs are perhaps archaic Arosi; they are neither modern Arosi nor Bauro, and are unintelligible to modern natives. They may be non-Melanesian.

(5) *Relationship Terms*.—In Wango, *kauwa* and *wauwa* are both used for grandfather. The proper Arosi term seems to be *uwai*; Wango seems to have adopted the Bauro terms with their masculine and feminine prefixes, and is actually using a word with a feminine prefix to mean grandfather. The word for grandmother seems to show a similar use; the true Arosi term seems to be *wae*, but at Wango *kawae* is used, *i.e.*, the Arosi word with the Bauro feminine prefix, and at Makira *kawawae*, which seems to be the Bauro *kauwa* added to the Arosi *wae*. (The Arosi *wae* is found on the south coast of Bauro for grandmother, where *kawae* is grandmother and *kawae-kini*, wife.) *Asi kare* and *wasi kare*, found at Bia for grandchild, are Bauro terms which must either have been adopted from Bauro or from people similar to the Bauro people who formerly lived at Bia. But the most interesting term, perhaps, is *waiha*. It is impossible to doubt that the *wa* of this word is the Bauro masculine prefix; in Bauro *waiha* is a brother-in-law, and *kaiha* a sister-in-law. Yet in Arosi we find this word used for *female* relations by marriage if the speaker is a woman. Such a mode of naming, depending on the sex of the speaker, is unknown in Bauro; apparently the term *waiha* has been adopted from Bauro people, or similar people once in Arosi, and then used in the Arosi manner, so that a masculine term has come to be used for women. It seems a natural explanation that an older terminology existed in Arosi like that of Bauro, but the bird clan people brought their own, adopting a few Bauro terms, but not recognising the force of the masculine and feminine prefixes, which were strange to them. These, of course, do not constitute the main argument from language, but are merely a number of instances of the use in Arosi of Bauro words or words of a language similar to Bauro, in the drum talk, the *kūkū*, the language the fairies are supposed to use, the language of some charms and children's games, and some relationship terms; and such instances seem to receive a natural explanation if we suppose these things to be the survivals of what the bird clan people found when they came to Arosi; they are just such things as would survive; nor are they likely to be borrowings, for then we should expect to find similar Arosi borrowings in Bauro.

Taking all these facts together, it seems a reasonable hypothesis that Atawa and Amwea, a dual system, is the original organization, not only of Bauro, but indeed of all San Cristoval: older than the totem clans and not totemistic. The totem clan people have over-run the narrow west end (leaving only traces of the talk and customs of the former people), the narrow east end, and the outlying islets,

and by purchase of wives or settlement some of their clans have spread to the central parts, especially along the coasts, without really affecting the social organization there. I believe the coast totem people of the centre, whose totemism is not pure totemism, were earlier than the bird totem people, and are probably the "Kava people" of Dr. Rivers' book. They were rather people with totemistic ideas than people with true totemism.

It is an interesting fact that the people of the two ends have always been more friendly with one another than with the people of the centre. Santa Anna canoes visited Wango and Arosi as friends, but were dreaded as enemies along the Bauro coast. The Santa Anna people (like the bird clan people) have traditions handed down, and one of these is that a Santa Anna chief named Karani went to Wango many generations ago (perhaps about two hundred years ago), and exchanged names with the Wango chief Mato, so that he became "Mato," and is so remembered. Such a thing could hardly have happened between men of Santa Anna and Bauro, where, even to this day, if a Santa Anna canoe is seen, the people all take to the bush. The separation between Arosi and Bauro is very marked, but Arosi and Santa Anna are traditional friends.

To assign meanings to the words *Atawa* and *Amwea* may be little more than guessing, but at least a possible, I think even a probable, meaning of *Atawa* is the people of the sea, or foreigners. *Matawa* means the open sea or the horizon, the sea far from land. *Maitawa* means harbour, and the Ulawa form *mā ni tawa* shows the meaning to be "eye of the *tawa*" or sea.¹ *Ha'atawa* (*ha'a* is the causative prefix) means "to point out to a person that he is a stranger, and not a native of the place." The *Atawa* might well be the sea people,² i.e., foreigners (just as Englishmen are now called *haka*, foreigners, from *haka*, a ship).³ This explanation of the word seems probable enough, but it is more difficult to assign a meaning to *Amwea*, and it is only very doubtfully indeed that I suggest *Mwea* may be connected with *Muā* or *Mwaa*, snake; the *Amwea* then meaning the snake people. It is often said that *Amwea* have something to do with snakes, and snake worship appears to be the original cult of Bauro, and may even date to a time when the *Atawa* had not reached San Cristoval; if so, the aborigines would call them the foreigners, and they might call the aborigines the snake people.

For it is hard to doubt that these are two peoples in face of their definite traditions. I suppose that the aborigines were the *Amwea*, then came the *Atawa* people

¹ *Tawa*, originally sea, may have come to mean shore; as the Malay *laut* (sea) is found in Mota as *lau* (seashore), and in San Cristoval as *rau* (edge or shore).

² Elsewhere (in New Ireland) the moiety resembling *Atawa* are called *Pakilaba*. It is curious that the first foreign ships to come to the Banks were called *Pakelava*, a word whose meaning is unknown. Cf. Codr., Mota Dict.

³ *Matawa* is used of foreign or introduced things—introduced in past times, as *haka* is of things introduced lately: *Aro matawa*, not a true taro of the place; *Aro ni haka*, a lately introduced variety of taro. Cf. *adaro ni matawa* (spirits) *adaro* distinguished from *hiona*.

from over the sea, speaking an archaic form of Austronesian, the first introduction, perhaps, of an Austronesian tongue into San Cristoval.

In many ways the invading Austronesian Atawa were superior to the aboriginal Amwea, cleverer and sharper or keener (so we may explain "bitter") and less given to fighting; fairer than the fierce, dark, and more morose and silent people whom they found in possession. But they were fewer, and therefore needed to rally to one another's help if they were anywhere attacked by the Amwea; and they were able to do so from their greater unity, because they spoke one language, whereas the aboriginals (Papuan?). spoke many, very distinct from each other. The Atawa, being few in number, would be glad to adopt boys as Atawa, but they would not allow any of these adopted boys to become Amwea, so they were either Atawa after the mother, or again Atawa as the younger brother of the father. Probably at first they lived apart, one portion of the village being set aside for them.¹ They would find it very necessary to keep up their prestige, and never allow any Atawa to be enslaved or beaten, or treated shamefully; their greater unity and superior knowledge would enable them to hold their own though they were in the minority; and their language might become generally adopted, as their coming, leading to greater unity, made the need felt of a common language. On journeys they would naturally travel separately.

Anyone who knows the Solomon Islands at the present day will see that this is in many respects a sketch of the relation that exists between the English, the *Haka* (ship-men) as the native calls them, and the Melanesians (Blacks) as the English call the natives; the *Haka* clever, fairer, sharper, the Melanesian duller, darker, slower; the *Haka* few but united, the Melanesians in far larger numbers but divided, each village hostile to its neighbours; the *Haka* with one language, the Melanesian with many; the *Haka* living apart, eating, sitting, walking apart from the Melanesian; but hardly a growing unity, though there is a growing use of the *Haka* language. It would seem to need the *Haka* in greater number, and with closer affinity in social customs to the natives, to supply an exact parallel; but otherwise the present conditions would only be history repeating itself. If my supposition is the truth, it was in San Cristoval a moiety of the dual people who brought there the Austronesian language now spoken, and the bird clan people came much later with a later form of Austronesian speech. The totem clan people would correspond with those whom, in Melanesia generally, Dr. Rivers calls the Kava people,² not, I think, with his Betel people, while the Atawa would belong to those whom he calls the Proto-Polynesians. If the Atawa spoke an Austronesian tongue, may not the Amwea

¹ The living apart of the totem clans may have been a copying of what they found among the dual people, when they first arrived.

² The practice of making a drink from kava root was once practised and is found among some of the old men of Arosi; but betel chewing is general in both Arosi and Bauro.

have done so also? The language question is too large to go into in this paper, but it may be said shortly that the languages of Bauro, truly Austronesian as they are in character, have some elements both of grammar and vocabulary which seem to be non-Austronesian, and that they even are in some respects less typically Austronesian than those of Arosi, besides being of a more archaic type of Austronesian language. It might be expected that the Amwea language may still exist somewhere in the interior, but this seems a vain expectation, as no trace of any non-Melanesian language (such as that of Savo) has yet been found. However, on a small island on the south coast, a spot which would be the last to be reached by people coming from the north-east or north-west, there is, or rather not long ago was, to be found a language which is very different from the Austronesian languages generally of San Cristoval. This island is called on the chart Marau, but *marau* merely means island, and the real name is Marau wawa. There is now no one living on it, the last people having disappeared some twenty years ago or more, in consequence of raids from the mainland, raids which seem to have been the climax to a long period of inveterate hostility. There is only one man still living of the original people, and he is an oldish man, and not likely to live long; when he dies all knowledge of the former language of Marau wawa will perish. I was able, however, to get something of it from him on a short visit. The language is quite unintelligible to the people of the neighbouring coast and has a peculiar singsong intonation. According to tradition it was taught to the children of the place by a pigeon. Two facts stand out after an examination of the little I got from him: first, many or most of the words seem to be merely Bauro or Arosi words transposed or carelessly pronounced. On the whole the transposition is so regular that I began to suspect the whole language was an invention of some native genius, but anyone who knows Melanesians would agree that this is leaning towards the miraculous. Secondly, there was an element utterly strange and quite unlike anything in Arosi or Bauro languages. To illustrate the first point a few words are given, and their Bauro equivalents:—

English.	Marau wawa.	Bauro.
come in	<i>mirisai</i>	<i>siri mai</i>
pudding	<i>mauta</i>	<i>tauma</i>
hungry	<i>rioho</i>	<i>hioro</i>
yam	<i>fauni</i>	<i>na ufi</i>
tree	<i>eipwi</i>	<i>pweigei</i>
come here	<i>manofai</i>	<i>fano mai</i>
quick	<i>tamamau</i>	<i>mamatau</i>
taro	<i>raano</i>	<i>na aro</i>
water	<i>wanai</i>	<i>na wai</i>

But there is a strange element, or one which seems so:

English.	Marau wawa.
go	<i>karomo (ma rago ?)</i>
no	<i>rīnai</i>
house	<i>manura (na ruma ?)</i>
man	<i>seminona</i>
Pronouns—	
I	<i>neimau</i>
thou	<i>nawirina</i>
he	<i>aimo</i>
we	<i>kairomu</i>
you	<i>mwaou</i>
they	<i>raono</i>

In the pronouns there seems to be no distinction between inclusive and exclusive in the first person plural. There is no article, and where words have been inverted the article has been considered as part of the word. I took down a tale in the language, which, with further information, must be dealt with in another paper; but this language must be either (1) an invention by a native some generations ago, a language made by metathesis of words of Arosi and Bauro and the addition of pure inventions—a strange hypothesis! or (2) it contains a non-Austronesian element, with Austronesian words wrongly pronounced, and uniformly so! In this latter case it may be we have a trace of the original Amwea tongue.

If the whole thing is an invention by a native, it is at least as interesting (and indeed perhaps more so), for in that case we have a population of two hundred people on a small island speaking a language quite unintelligible to their neighbours, a language which has been invented by someone in a previous generation by using sometimes Bauro, sometimes Arosi, words and transposing them in a rough and ready fashion, and then (to add yet another touch of mystery) either drawing on his imagination or on some now lost stock of words to get a new set of pronouns and some peculiar words for his new language!

Note on Atawa and Amwea.

The statement that these clans are not totem clans is perhaps too strong. Atawa are often forbidden to drink the pale coco-nut. In the tale recorded by Mr. Drew and myself, when the serpent ancestor was killed, a coco-nut sprang up, and the serpent's daughter gave a nut to her child, saying, "this is your grandmother," and to her husband, saying, "this is my mother's blood." This is a Banks Island story, but parallel to the San Cristoval one, and in San Cristoval the first drinking nut is sacred to the serpent spirit. Again, Atawa were said to be descended from a woman saved by a *kafika* tree (*Eugenia*), and Amwea are often vaguely connected with snakes. Yet the totemism is vague,

and, if it be totemism, is serpent and tree totemism, and quite unlike any other totemism in San Cristoval.

3.—*The Bauro Relationship Terms.*

The Bauro relationship system is, like that of Arosi, a classificatory system. Each term includes a number of people, and everyone has his proper relationship term relatively to the rest. A stranger can be adopted, and then takes his place in this system, and comes into definite relationship with everyone, and each relationship carries with it certain duties and privileges, so that adoption gives a settled place in the social system. Such a system has a good practical side: there can be no poor, there is a certain community of goods, and everyone has definite and acknowledged claims on other members of the community; there are, indeed, words for the widow and orphan, but no widow or orphan can be destitute, for they, in common with the rest, have many brothers, sisters, fathers, and mothers with whom they can live without any humiliating sense of accepting "charity." The solidarity of the Bauro community, based on a dual system of two moieties, is greater than that of Arosi with its many clans, and the duties of relatives are more numerous. The social atmosphere is quite different, and the relative terms very different indeed. And Bauro is much less homogeneous: very considerable variety is found in the use of terms. But possibly the south coast should be considered separately.

The following are the relationship terms used in Bauro, whether it be a man or woman speaking, for, owing to the use of masculine and feminine prefixes, the sex of the speaker is immaterial, a marked difference from Arosi. The terms vary from village to village in some particulars.

1. Terms applied to Males (prefix *wa*).

(1) *Wama*, father, father's brother, etc. *Wama* is sometimes used for great-grandfather. In direct address this is *mama*.

(2) *Waupu*,¹ mother's brother, etc. Its use for the husband of the wife's sister depends on a particular form of marriage—with the sister of the mother's brother's wife.

(3) *Wamau* = *waupu*; the term *waupu* is used only in the actual Bauro, and *wamau* is more widely used at Fagani, Rarafu, and elsewhere. On the south coast both words occur: *waupu* opposite Bauro at Haununu, and *wamau* to the west, i.e., the use of terms follows the rivers. Often either word is used. Usually the prefix is dropped (but not with *waupu*). In direct address, *Mamāu*.

The son of the actual sister is called *mau(aku) kare*.

¹ The son of a man's mother's father's sister is *waupu* or *wamau*, and conversely the son of a man's mother's sister's daughter.

To the east of Bauro *mau* or *mo* is found, so that *waupu* is confined to the centre of the island.

(4) *Wauwa*, *Waura*, *Waoga*.—Apparently all three words are used indifferently, but really, it is said, with slight shades of meaning, for two classes.

- (1) Elder brother, generally including all cousins.
- (2) Grandfather, either father's father or mother's father.

In Bauro itself it is said that *waura* really gives no sense of "elder," and might be used of someone younger than oneself. It is, in fact, used by the wife of an elder brother to her husband's younger brother, younger than herself perhaps, but with a descriptive word *inoni* added. On the other hand, in Kahua to the east, *wauwa* is said to be used for elder brother only, and *wira* (evidently the Bauro *waura*) for grandfather only, or at least for someone much older. Again, I have been told that *wauwa* is used of a man's own elder brother, and *waoga* and *waura* of someone else's. There seems a tendency in Bauro to prefer *wauwa* for grandfather and *waoga* for elder brother, but on the whole *wauwa* is most generally used for elder brother; though in practice, I believe, they are all used indifferently for the status of either elder brother or grandfather. The vocative form is *Tatai*.

(5) *Wasi*—

- (1) Younger brother.
- (2) Son's son or daughter's son.

At Fagani it is used for elder or younger brother.

When used for a grandchild it has the descriptive noun *kare*, "child" or "little," added to it. Thus *wasi ku kare* means "my child-younger-brother." In Kahua to the east, however, *wasi* is used without this descriptive word for grandchild.

(6) *Waiha*, wife's brother, sister's husband; at Fagani and on the south coast opposite it is also used for cross-cousin—in neither place can cross-cousins marry. In direct address it is the only term (except the special vocatives) which is used without a suffixed pronoun.

(7) *Waharo*, all male relatives by marriage of the same generation, all kinds of brothers-in-law.

(8) *Wahungo*, all male relatives by marriage a generation higher or lower: wife's father, daughter's husband. At Rafurafu, Dr. Rivers says, it is also used for the father's sister's husband, and this seems likely, but is denied.

(9) *Wanipuna*, used at Haununu only for cross-cousin; but in the interior and at Rafurafu the word is known and occasionally used.

(10) *Wakare*, son, a male of the generation below; often used without the prefix.

(11) *Wareha*, husband of the father's sister.

(12) *Wakerema*, "little father," not the actual father but those called *wama* in a classificatory sense.

- (13) *Warima*, husband.
- (14) *Mwane*, husband ; *mwane* means male, and takes no prefix.
- (15) *Wai*, husband or wife.
- (16) *Wakikii*, used only at Fagani for the son of the mother's brother's daughter.

Owing to the different dialects there are differences in spelling : *waima*, *weme*, at Parigina for *wama* ; *waifa* at Fagani for *waiha*, etc.

Corresponding to these masculine terms are feminine ones, all prefixed by *ka*.

(1) *Kaina*, mother, etc. Also found as *kana*, *keina*, *keine*. *Kaina* may be used for great-grandmother.

In direct address, *tita*, *teitei*, *katita*, *kateitei*.

- (2) *Kaupu*, daughters of a man's sister.
- (3) *Kamau*, the same as *kaupu*.
- (4) *Kauwa*, *kaura*, *kaka*, elder sister, grandmother. *Kaka* apparently corresponds to *waoga* ; *kaoga* is occasionally used.

At Haununu the wife of the mother's brother is called *kaura(ku) inoni*. On the north coast the wife of the elder brother is also called *kaura(ku) inoni*, "my elder-sister-inoni," and the reciprocal which she uses to her husband's younger brother is *waura(ku) inoni*. *Inoni* is evidently a descriptive noun or adjective, like *kare* in *wasi(ku) kare*, grandson ; but its meaning is doubtful. I have been told it means "noble," and is used of a chief in this sense ; ordinarily the word means man (human being), but in Santa Anna it is used for husband or wife.

(5) *Kasi*—

- (1) Younger sister.
- (2) Granddaughter, but almost always in Bauro with the descriptive noun *kare* added.
- (6) *Kaiha*, husband's sister, brother's wife ; and at Fagani and the south coast opposite it is used for cross-cousins (who cannot marry).
- (7) *Kaharo*, female relatives by marriage of the same generation ; wife's sister, brother's wife, husband's sister.
- (8) *Kahungo*, relatives by marriage a generation above or below ; wife's mother, son's wife. It is used at Rafurafu for the wife of the mother's brother, and the same use is found at Haununu, on the opposite coast.
- (9) *Kanipuna*, cross-cousin, at Haununu.
- (10) *Kakare*, daughter.
- (11) *Kakarerina*, "little mother," not the actual mother, but other women of the same standing.

- (12) *Karima*, wife.
- (13) *Hehene*, wife ; *hehene* means female and does not take the feminine prefix.
- (14) *Kawae*, on the south coast at Marogu and Tagini means grandmother (cf. Arosi, *wae*, grandmother), but at Haununu *kawae-kini* is the regular word for

wife ; *kini* is probably the Malaita word meaning woman or female, which (as *geni*, *gini*, *keni*, *kini*) is common in women's names in San Cristoval.

(15) *Wai*, wife ; *kawai* was used at Fagani.

(16) *Kakii*, only found at Fagani, meaning the daughter of the mother's brother's daughter.

The fact should be made clear that there are slight differences from village to village in the use of terms.

Besides the above terms there is, as in Arosi, a term *soirua*, literally "to name two," for a person who by marriage or adoption has more than one relationship to the speaker : a man may be both his *wasi* and *waiha*, a woman both *kasi* and *kaura(na) inoni* ; he calls such a person *wasoirua* or *kasoirua*, so that he may use one of three terms when speaking of some relation of his.

4. *The Masculine and Feminine Prefixes.*

It is important to notice that, owing to the use of these remarkable prefixes to mark the sex of the person named, the sex of the speaker himself has not the same effect on the use of terms as it has in the typical Melanesian system of Arosi. Thus in Arosi *doora* means a person of the same generation and same sex as the speaker, and since Arosi does not distinguish at all between elder and younger as Bauro does. *doora* is represented in Bauro by four different terms, *wasi*, *kasi*, *waura*, and *kaura*.

The use of such prefixes is, so far as I know, unique in Melanesia, though there are traces of it in the Banks Islands. The prefixes in Bauro are not only found with relationship terms, they are also used universally with names : the name of every man has *wa* prefixed, and the name of every woman has *ka*.¹ In the case of men these prefixes are often, perhaps usually, dropped, as they occasionally are with the relationship terms ; but with women's names they are almost invariably used.

This use with names has a parallel in the Banks Group. In Mota and Motlav men's names very often have the prefix *wo*, and in Santa Maria the prefix *we* is used with men's names, as much perhaps as *wa* is used in Bauro ; the name with *we* is the full form, but the *we* is often dropped in ordinary conversation. The prefix *ro* is found with women's names in Mota and elsewhere in the Banks Group, but it may have a different origin, as have the Raga name prefixes, *tari*, *mol*, etc. ; but the *wo* and *we* of the Banks Group are probably a true parallel and a survival, in another dual region, of this form of nomenclature.

The prefix *wa* also occurs in the indefinite pronoun *wani*, someone, *wani are*, this one, and probably in *wera*, used before numbers when a number of men are

¹ In names in pedigrees, and in those of many heroes in old tales, the prefixes are found as *wai* and *kai*, a fact to be carefully noted. The Santa Maria *we* may be originally *wai*. In Mota, *we* replaces *wo* in old tales, e.g., origin of *Suge*.

referred to: *wera rua*, two people; *wera oru*, three people, and so on, which is probably for *wa ira*, *ira* being the third personal pronoun plural. It is true *wera* is found in Arosi, and is used of only one person, but, as is shown elsewhere, these prefixes are found in Arosi terms, but used incorrectly, and are, I believe, a legacy from the dual people of Arosi displaced by the bird clan people.

The prefix *wa* is also used with a set of terms, found in Arosi as well as in Bauro, to which I have not hitherto referred, reciprocal collective terms, a related group of people being thus described.

These are formed by adding the reciprocal *hagi*, in Arosi *ha'i*, to the relationship terms, suffixing the third personal pronoun plural¹ and prefixing *wa*.

Thus *wa-hagi-asi-ta*, a group of people who are *asi* (*wasi* or *kasi*) to one another, or two people one of whom is *wasi* to the other.

Wa-hagi-upu-ta, a man and his nephew.

In Arosi, *ha'i-amada ha'i-inada*, "the whole family." In asking a man in what relationship he stands to another, the proper form of question is, in Arosi, "*hai-taha-da?*" "you two?" (*taha* = what).

This reciprocal is interesting, as it shows the existence of two Austronesian reciprocal forms, *hagi* and *hari*, both forms, *ha'i* and *hari* (and also *hai*, *hari*, and *hei*), occurring in Arosi. But as the *g* is the "Melanesian *g*," a guttural trill which is often replaced by *r*, they may have a common origin. When this reciprocal is used, the prefixes are prefixed to the reciprocal and not to the relationship term. Similar reciprocals are found in Ulawa and Fiji but without the prefixes.

5. *The Bauro Terms Uwa, Asi, and Upu.*

The Bauro terms have been already given, but something more must be said about some of them. The interest of *uwa* is twofold, first that it has equivalents in *ura* and *oga*, and secondly that it is used with two meanings: grandparent and elder brother or sister. It is used for all grandparents, but this may be an extension of its use, and the use would seem to point to a marriage of a man's elder brother with one he calls grandmother, a marriage similar to that now taking place in Arosi. *Uwa* is probably originally simply elder or old²; for it is likely to be the same in origin with the Fiji *tutua*. Eddystone *tuga*, Florida *tuga*, the Banks Islands *tuga* and *tuaga*, and perhaps the Malaita *auwa*, all meaning elder brother (the dropping of *t* is characteristic of San Cristoval languages); and *oga* is probably only a variant. If so, either when the elder brother took the widow of his father's father or married a woman of her status, the term came to be applied to the men of the father's father's standing, now the brothers of the elder brother, or the elder brother was raised

¹ This, perhaps, is merely a suffix and not the pronoun. Cf. the Ulawa and Polynesian forms in *na*.

² From the Austronesian *tua*, old. Cf. *Matua* in Polynesia.

to the status of a grandfather (*uwa*). *Ura* is no doubt the Ulawa *ula*, there either elder or younger (and sometimes similarly used in Bauro). Rev. W. G. Ivens considers this is found farther west in the Florida word *kula*, friend. Considering that this term seems to have rather a general sense, and may be used for younger brother, it is rather curious to find at Toroa in Kahua that *wira* (evidently *ura* with the masculine prefix) is used *only* for grandfather.

The use of *asi kare* for grandson, while *asi* means son, seems explicable by the same form of marriage. It might, indeed, be natural to call the grandson *asi*, for since his elder brother now has the standing of the father's father, he himself may be lifted up to be younger brother of men of that generation, and *kare* may be added to show that he is a child-*asi*, not an *asi* of their own generation and about their own age. But it would also receive a natural explanation in the marriage of a man with one whom he calls granddaughter, his daughter's daughter, and though I have not yet heard of such a marriage in Bauro, *i.e.*, a man marrying with a woman he calls *kasi ku kare*, perhaps it might be better to explain this use of terms by marriage with a woman two generations below, rather than that of a man with a woman two generations above his own. The use of the term implies marriage with "grandmother" or "granddaughter."

It is remarkable that no other terms have been affected by such marriages. Of the marriage of a man with one he calls grandmother I have no instance in Bauro; the more remarkable as I have found several cases of it in Arosi, where the terms for brother and grandfather are distinct.

Upu, the word used for mother's brother, is perhaps the most interesting relationship term in Melanesia. Dr. Rivers has discussed it very fully.¹ *Wanipuna*² is used at Haununu for cross-cousin, and as *wani* is an indefinite pronoun, this word probably contains the same term. *Mau* (vocative *Mamāu*), used elsewhere in San Cristoval for mother's brother, is very probably the same word, with the prefix *ma*; and then would have a parallel in the Florida *mavu*, cross-cousin. It is likely that *marahu*, a term to be described presently for a person with whom one has a relation like that of a man with his mother's brother, may be the same word with the prefix *mara* (like, as), very commonly prefixed to nouns in San Cristoval, and having the meaning of the pidgin-English "all-same" with a rather depreciatory sense, so that *marahu* may mean a person, "all-same-mother's brother" (in pidgin-English). The Florida equivalent of *marahu* is *mavu*, a namesake or cross-cousin. The Santa Anna term *sinamapu* for grandparent may contain the same word in its ending, for *upu* or *tupu* is found both in Melanesia and Polynesia for grandparent, and Dr. Rivers shows that *pu* is the root. This term, then, seems to have a very wide range with a variety of meanings—grandparent, mother's brother, cross-cousin,

¹ *History of Melanesian Society*, p. 179, vol. ii.

² With suffixed pronouns *wanipunaku*, *wanipunamu*, *wanipunana*, etc.

and namesake or close friend. The vocative used for mother's brother in Mota, is in San Cristoval used for grandfather and elder brother, the word *tatai*.

6. *Adoption in Bauro.*

Adoption is very widely practised in Arosi as well as in Bauro, but as there is not much difference between the two places, and in Bauro it is, perhaps, even more prominent than in Arosi, it will be described here. There are five kinds of adoption known to me which are regularly practised, all common and all vitally affecting the social life of the people: (1) the *marahu* adoption; (2) adoption of children or adults taken in war or punished for offences by being sold to people at a distance; (3) adoption of children by buying them from a distance; (4) adoption of children at birth; (5) adoption to keep green the memory of the dead.

(1) *The Marahu Adoption*.—The meaning of the word *marahu*¹ has already been given as (1) a namesake, (2) one with whom a man exchanges names, (3) one with whom he exchanges wives, (4) a friend. The third is seldom seen nowadays, the first and fourth are common enough, the second is the most interesting. Most natives, one is told, have a *marahu* in this sense. There is the famous case of Karani of Santa Anna who became "Moto," exchanging names with the Wango chief, who became "Karani." The practice is to emphasise friendship by the exchange of names, and this gives a man the status of his *marahu*. A small present is exchanged, and the man is considered to have a right to the property of his *marahu*, which will not be withheld from him; he may take his coco-nuts, his yams, or even tobacco from the bag of the *marahu*, and he has very much the close and intimate relationship to his *marahu* that a boy has to his *mau* or mother's brother.² I should know something of the custom, as I have a *marahu* both in Bauro and in Arosi, and have frequently been addressed by their names, both directly and in letters. When I became *marahu* to a Bauro man I was received into his place in the society of the village, called all the people in it by the terms used by him and was called by the terms they gave him. I was told how to address each, to call a young boy grandfather and another uncle; and it was explained to me that the names of certain of my new relatives must never be used, *i.e.*, the native name—the baptismal might be; and how to get over the difficulty when I wished directly to address people whose names I must never use. Above all I must never use the name of one I called *wauwa* (in practice these were elder brothers), not only in direct address but in any conversation, and he might be addressed directly as *Warua* (*i.e.*, the numeral two, with the masculine prefix).³ I found that not only was I

¹ *Marahu* is used for the husband of the sister's daughter in Kahua.

² Cf. the use of *tauva* in Fiji; A. M. Hocart, *Journal Royal Anthr. Institute*, xliii, 101. The use of *maru* in Florida strengthens Mr. Hocart's argument, especially as Fiji and Florida are known to have so many points of resemblance.

³ Unless it is for *Waura*.

now Amwea, but Amwea people everywhere gave me food as a matter of course, and if I wanted a native bag or limebox, they were made for me without any payment being expected or asked, and getting boys for odd jobs became a much easier matter : tobacco, no doubt, was expected by all Amwea people when they called, and other little gifts, but this was hardly a new fact due to the *marahu* adoption. A *marahu* is a close friend with whom one is on terms of great freedom : like a boy and his uncle, carrying much the same privileges as that relationship ; and is a means of adoption for a foreigner.

(2) and (3) have already been mentioned ; (3) is practised partly to get children without the trouble of rearing them, and to replenish the population dwindling through disease or from the practice of child murder ; and also to strengthen alliances, thus making relatives at a distance, and sometimes ending in this way a long period of hostility.

(4) Adoption at birth is very common. In Arosi the first woman to cut the umbilical cord and shave the child's head becomes the mother. Both (3) and (4) put the child exactly into the same position as if he or she had been born into it.

(5) Adoption to keep green the memory of the dead.¹ This is common and important, in that it alters relative terms used, and brings men and women of the same age into the status of those one or two generations removed from them, and so may be the cause of the anomalous marriages found in San Cristoval, or a contributory cause of the apparent confusion in the use of relationship terms. The commonest forms of adoption in Bauro are as follows : A man adopts a small boy to the name and status of his (1) father, (2) mother's brother, (3) grandfather, and a small girl to the name and status of his (1) mother, (2) grandmother. A woman adopts a child to the name and status of (1) her father, (2) herself. The reason given is to keep green the memory of the dead, and it is usually done when the relative dies. Probably there are other forms of adoption which have not come under my notice, but these are all common. They all bring boys and girls into the status of a generation whose members should be older or younger than themselves, while the boys and girls themselves are the playmates of those of their own age whom they call grandparent or father, and some of whom they will subsequently marry. There is nothing strange to them, however strange it may seem to us, in a man marrying in another generation ; and, indeed, as I have said above, generation seems hardly the right word to use in such a case ; perhaps standing or status might be used. An instance of such adoption led not long since to the murder of a white man. A man's mother's brother was drowned in landing from a recruiting vessel and the man put out money to buy a boy to replace him ; by a misunderstanding this was thought to have been put out for a white man in revenge for the accident, and a white man was shortly after killed for the sake of the money. Another example

¹ Perhaps this might be called " memorial adoption " ; I do not remember reading of it elsewhere, unless it is this which Dr. Rivers describes in Hawaii.

of such adoption is found in what I may call my own family circle. The father of my *marahu*, a man named Mono, wished to remember his own father Sutagera, who had lately died, and bought a boy from twenty miles away somewhat younger than or about the same age as my *marahu*, Waiau Gafuafaro. This boy was then called Sutagera and took his status, becoming Waiau's grandfather, though younger than Waiau. Mono's brother (and Mono himself) always called this young boy *Mama* (father). I, of course, called him grandfather. Later on he married a girl of about his own age whom he called daughter, and Waiau called mother. A boy of the place may be adopted in this way and then all the terms he used before must be altered to suit his new standing. It is an interesting question whether such adoption might not have just the effect of bringing the different genealogical strata together which we find in San Cristoval, and so causing what we call anomalous marriages. Dr. Rivers has collected many instances of such marriages in different parts of Melanesia (the existence of which he deduced from the relationship terms used before the marriages themselves were actually observed), and he has based on the occurrence of such marriages his theory of a Melanesian gerontocracy and the former dominance of the old men, but it is allowable to ask whether a system of adoption such as this might not have the same effect as the marriages of people really one or two generations apart and really different in age; which Dr. Rivers supposes to have taken place originally, with the final result of seeming to bring together different genealogical strata. For the San Cristoval adoption does this more simply, and is actually taking place; whereas such marriages of those really two generations apart are rarely known to take place now: they are rather suppositional, and their former existence deduced from the marriages now of people of the same age but different status.¹ It is quite *conceivable* that any or all of these anomalous marriages may be due to such a system of adoption if it was once generally practised in Melanesia, and it would be worth while to enquire whether such forms of adoption are found where such anomalous marriages occur. Boys in San Cristoval are in this way actually brought into the status of those removed from them by two generations, and marriage with one called a granddaughter might easily be found actually taking place as a result of this adoption. It is only necessary to imagine certain particular forms of adoption taking place regularly, and the result would be certain anomalous marriages taking place regularly, with the consequent alteration in the relationship terms. Even if such adoption subsequently ceased, the genealogical strata once brought together, the anomalous marriages would continue. But I do not see how the adoption *now* found in San Cristoval could produce the marriages also found there. It leads to children of the same age having the relative status of people two generations apart or even three, but not one generation apart, except in the case of a woman

¹ I think, however, that memorial adoption is a result rather than the cause of anomalous marriages, yet when once in force it may help very much in bringing the generations together.

adopting a girl to her own name and status, and this is not common. But in Bauro the anomalous marriages are those of people one generation apart, as in Arosi. This, however, might be explained by the fact that people three generations apart are given the same terms as those divided by only one generation; the great-grandfather being called *wama*, father, and the great-grandmother *kaina*, mother; so that the objection is perhaps not insuperable. At all events, this adoption of children to keep green the memory of the dead, giving the children their very names and positions, is well worthy of notice, and cannot be neglected when the cause of these anomalous marriages is considered.

7.—*Anomalous Marriages in Bauro.*

With regard to anomalous marriages actually taking place in Bauro at present, I have not collected much evidence, but I believe the following illustrations are fairly typical :—

At Fagani, out of 20 married men—

13 have married *kasi* (younger sister).

4 have married *kamau* (niece).

2 have married *kakare* (daughter).

1 has married *kaina* (mother).

At Funariki, out of 9 married men—

6 have married *kaina* (mother).

1 has married *kasi* (younger sister).

2 have married *kakare* (daughter).

At Mwanihuki, out of 9 married men—

5 have married *kakare* (daughter).

1 has married *kaupu* (niece).

2 have married *kasi* (younger sister).

1 has married *kaoga* (elder sister).

At Bauro (3 small villages), out of 22 married men—

12 have married *kasi* (younger sister).

4 have married *kaupu* (niece).

2 have married *kaina* (mother).

4 have married *kakare* (daughter).

Altogether out of 60 married people—

29 have married a woman of their own generation.

31 have married a woman a generation above or below.

8.—*Personal Names and their Use in Bauro.*

Personal names hold an important place in native estimation. When a child is born it receives at least two, perhaps three, names. One of these is in the nature of a

nickname, connecting the child with some event that took place at the time, or something which recalls the circumstances of the birth. A few years later another name is given, which is the boy's name in ordinary life, for some time at any rate. But at birth, besides the name mentioned above, there is given to the child a name of one of his or her relatives. Now if the names given in a large number of pedigrees are observed, it will be seen, that especially in Arosi, but also in Bauro, certain relatives are almost always chosen to give their names to the child. In the case of a boy he is named usually after his father's father (never the mother's father) or sometimes, but less usually, after his mother's brother, and in Bauro occasionally, but rarely, after his father. In the case of a girl, she is almost always named after her mother's mother (not her father's mother).¹ Now if we remember how, in the *marahu* adoption, taking the name of the *marahu* puts you into his position, so that formerly you exchanged wives with him (I think this was certainly done), and you have, after taking his name, his status in society; and when we remember also how in adoption a boy, by taking the name of a man's father or grandfather, takes also his status and general position in society, I think the importance of naming after these particular relatives is clear: a boy so named must come into their position: he is, in fact, called the *marahu* of the person after whom he is named, and in many cases he is called by the relationship terms which really belong to his namesake, this very usual custom causing me a good deal of difficulty when I first began recording pedigrees. It is, then, the position of his father's father into which a boy normally comes, occasionally into that of his uncle, while a girl normally comes into the position of her mother's mother. It follows, I think, that in native opinion the boy can marry a woman who is the wife or potential wife of the man into whose status he comes: the wife of his father's father; and a girl can marry the husband of her mother's mother. Such seems to be the logical conclusion that a Melanesian would draw from the naming after these particular relatives. Both marriages, that of a man with a woman who has the status of his father's father's wife, and with a woman who has the status of his daughter's daughter, would thus naturally follow the custom of naming in this way the children, or rather, perhaps, the naming in this way would follow such marriages. The former takes place in Arosi, the latter, so far as I know, does not; but in Bauro the terms seem to point to it, and adoption to a standing two generations higher would seem naturally to result in such a marriage. In the other case (that of naming a boy after his mother's brother), there again this should put him into the status of that relative, and he should marry a woman who is the wife or possible wife of the mother's brother; which, in fact, is commonly done both in Arosi and Bauro, the boy marrying, it will be remembered, the widow of his mother's brother, or more usually her younger sister. Here, again, this manner of naming probably follows such marriages, and is not the cause of them.

¹ These names are not always given when pedigrees are obtained, unless special enquiry is made.

It is possible that the naming after the father's father in the case of a boy, and the mother's mother in the case of a girl, might be due to a belief in reincarnation, combined with the belief that the reincarnate spirit must come into the body of one of his or her own moiety or clan. There is, in Bauro at any rate, some belief in reincarnation, though it does not seem to hold an important place in native thought. Yet my *marahu* Waiau is said to be a reincarnate spirit. He was born and named as usual, but was very sickly when he was a few days old, and indeed from birth. At this time a man named Waiau died, and his spirit returned into the sickly baby, when it was given his name, and the new Waiau recovered and grew strong. So a boy named Buarabe, living at Bia on the south coast of Arosi, is a reincarnate spirit. A man named Wariu at Mwanihuki told me there was a general belief in reincarnation (I have been told repeatedly in Arosi that they do not believe in it). He said if a child cries, names of the dead are called till he stops crying, to show which he desires, *i.e.*, what ghost has been reborn. I have, myself, seen this done in the case of the baby of a man named Mamake; this baby refused many names till, finally, in despair, Mamake said perhaps it was a Christian spirit, and tried the name Mary, at which the baby stopped crying, and Mamake immediately called her by this name, and suggested she should be baptised. Wariu said the names of ancestors were chosen, partly for this reason and partly for remembrance. The fact that the spirit Haudibwari, who lives at Marau Sound, the abode of the dead, is said to put the spirits into the wombs of women, seems to bear on this, and I think there is probably much to be learnt about reincarnation in San Cristoval. But even if this were the reason for so naming children, all the more would they have the status of these relatives, after whom they were named, since they would be those very relatives incarnate, and would naturally take their position in society. The naming after the mother's brother might be analogous and later.¹

9.—*Avoidance and Mutual duties of Relatives in Bauro.*

On the south coast of Bauro, at Parigina and elsewhere, intercourse between brother and sister (actual brother and sister) is forbidden. A brother must never :—

- (1) Name his sister.
- (2) Approach her.
- (3) Laugh or play in her presence.
- (4) Touch anything belonging to her or even lying near her.
- (5) Go into a house where she is.
- (6) Enter the same canoe.
- (7) Tread on her bed mat.
- (8) Meet her in the path (one turns into the bush).
- (9) Go into the garden she is in.
- (10) Speak to her.

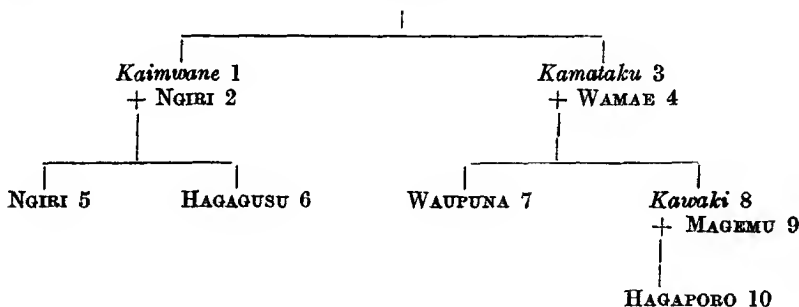
¹ The vague belief in reincarnation, for I have really found nothing more than this, appears to belong to the dual people rather than the bird totem people.

And these restrictions hold even when both are grown up and married, and until their death ; to an Englishman, accustomed to think of his sisters as his most intimate friends and counsellors, a truly strange state of affairs, but nevertheless one that holds also elsewhere in Bauro, though the regulations are not everywhere so strict, yet everywhere a man should avoid his sister and never name her or speak to her.

At Parigina cross-cousins treat one another similarly, and also at Fagani, as in Arosi ;¹ but in some parts of Bauro they may and do marry.

A boy treats his elder brother with quite exceptional respect : he must never laugh or joke in his presence, and never use his name in conversation (except a baptismal name) ; he is shy and reserved in his presence. In giving a pedigree someone else must name the informant's elder brother. He calls the elder brother *tatai* (also the elder sister), including elder cross-cousins in parts of Bauro.

On the other hand, a boy and his mother's brother are on a relation of great freedom towards one another. They are always joking and laughing at one another. The mother's brother (or even the sister's son) is asked by a man to make arrangements for his marriage. An actual case came under my observation where a young man, Hagagusu, wished to marry. The following pedigree will make clear the proceedings :



Hagagusu (6) first went to Hagaporo (10), a small boy, and Hagagusu's *waupu*, and told him he wished to marry a girl called Kawuri, who was his *kasi*. Hagaporo then went to 5 and 7, the *waura* (elder brothers) of 6, and talked it over with them. Later on Hagaporo went and worked in the garden of Kawuri's father and slept at their house. Magemu (9) had already spoken to the father and mother, this being his duty. Hagaporo told the father and mother of Kawuri that he wanted a wife for himself, meaning for his uncle. The rest of the proceedings need not be described here, but what happened in this particular case shows well how each relative has his proper part to play in such transactions, the elder brothers, whom Hagagusu is much too shy to approach, being informed and acting as stately advisers, the sister's husband taking the first steps, but the real work being done by the young nephew, to whom Hagagusu can talk quite freely, and who is his constant companion.

¹ These Arosi cross-cousin restrictions are not enforced after the cross-cousins are both married.

The nephew receives his uncle's property when the uncle dies, except some portions reserved for the brothers of the dead man ; and during lifetime the uncle and nephew share things, and are quite free to take each other's possessions if they so wish. In Bauro, as well as in Arosi, the nephew often marries the widow or younger sister of his mother's brother.¹ He helps his uncle continually in garden work, and the two are wonderfully intimate in a variety of ways, the relationship being most like, perhaps, that between two bosom friends ; but there is nothing quite like it in our civilization.

The father's sister has a position of importance, and it is she, in Bauro, in parts of Bauro at any rate, who cuts the umbilical cord when a child is born. Her brother's child must obey her, and may go freely to her house, and may take her things. Her husband is called *Wareha*, presumably "the great one" (the *mwaneraha* or chief is here *mwaeraha*, so no doubt *wareha* is the same word, *raha* with the masculine prefix). This, a Motlav man remarked to me, was in great contrast to their custom, for in Motlav they would put his food on the ground, cook food for him, and then throw it away, throw dust on his head, and generally deride him.²

D.—KAHUA AND UGI.

Kahua.

About Kahua and Ugi I shall say very little beyond giving the relationship terms from both places. In Kahua (these facts were learnt at Toroa, five miles east of Kahua Point) both the brother-sister and the cross-cousin restrictions are found. Women are sometimes bought, as in Arosi, for wives (this is very unusual in Bauro), and in that case do not return to their mothers ; but in the case where a woman is not bought, she and her husband may live either with the husband's or wife's people. The Pagewa (Shark) and Urawa clans are found, and I think perhaps one or two others, as well as Atawa and Amwea, but the pedigrees show almost everybody to belong to the two latter. Pagewa people are also found in bush villages.

The relationship terms are similar to Bauro, and are as follows :—

<i>wira</i> , grandfather.	<i>kira</i> , grandmother.
<i>waima</i> , father, etc.	<i>kaina</i> , mother.
<i>wamo</i> , mother's brother, sister's son.	<i>kamo</i> , sister's daughter.
<i>wahungo</i> , male relations by marriage, a generation above or below.	<i>kahungo</i> , feminine equivalent of <i>wahungo</i> .
<i>wauwa</i> , elder brother.	<i>kauwa</i> , elder sister.
<i>wasi</i> , younger brother, grandson.	<i>kasi</i> , younger sister, granddaughter.
<i>waiha</i> , sister's husband, etc.	<i>kaiha</i> , brother's wife, etc.
<i>wakare</i> , son.	<i>kakare</i> , daughter.

¹ In an article in the *Southern Cross Log* I denied this ; but I was mistaken. *Southern Cross Log*, Oct., 1917, p. 10.

² Both customs might serve the same purpose—to magnify the father's sister.

Aharo is used as in Bauro as a general word for relations by marriage of the same generation.

keuwa is written for *kauwa* ;

marahu is used for husband of the niece, *kamo* ;

*geteiaku*¹ is used for wife ; also *hehene aku* ;

waupu may be used for *wamo*.

The masculine and feminine prefixes are often dropped. In direct address *mama* is father, *taitai* mother. The Bauro *tatai* and *mamāu*, used in direct address to elder brother and mother's brother, are not used, being replaced by *wauwaku* and *moku* (*ku* = my). A pedigree shows that anomalous marriages take place. A man does not joke or talk much to his elder brother ; and has the same relations with his mother's brother as in Bauro.

I obtained two short pedigrees from the other coast of Kahua district (from Napasiwai) which show that *waura* and *kaura* are used there for grandfather and grandmother ; *wamau* and *kamau* for nephew and niece. *Wasi* and *kasi* are used (as at Toroa) for cross-cousin, as well as for younger brother and sister ; and though the pedigrees do not give examples, probably they are also used for grandson and granddaughter. *Waoga* is elder brother, *hehene* wife. *Keikei* was given as the vocative form of *kaina* (mother). *Kaura inoni* was given as the term for the wife of a younger brother.

In both places descent was matrilineal, and only Atawa and Amwea appeared in the pedigrees. At Napasiwai, Atawa and Amwea were said to live together, and another clan, Maroa, at a little distance by itself.

At Toroa I was told Atawa cannot eat the fish *iga tatarī* (a separate clan, it will be seen, at Santa Catalina), or, as in Rafurafu, drink the pale coco-nut (*niu maho*). Here also, as at Rafurafu, I was told of restrictions in eating ; should Atawa eat food after Amwea had eaten it they would become feverish, suffer from headache, and probably die. My informant was an Atawa man, but the reverse probably holds, as I was told at Rafurafu that if Atawa eat coco-nuts, breadfruit, areca nut, betel pepper or Malay apple (*niu, parego, pua, amadi, kafika*), Amwea cannot eat them ; but only these foods ; and that Atawa should not eat if Amwea have eaten of them first. At Rafurafu (Bauro), and there only, I heard a story of the origin of Atawa from a woman who, in a famine, was saved by finding and eating from a *kafika* (Malay apple) tree. At Maepua, in the centre of Bauro, Atawa and Amwea plant their coco-nuts apart, as they do in some parts of Kahua.

Here I may note again how Atawa differs from the totem clans in having different totems ascribed to it in different places, if it has any at all. In Arosi it has birds connected with it, *tahitahi marada* at Wango on the north coast, and a small bird,

¹ *Getei* means woman.

called *bibisu*, at Bia on the south coast ; but in the west the *hada*, or eagle. In Kahua it is connected with *iga tatari*, an eastern (Santa Catalina) clan, and with the light coloured coco-nut. In Bauro, in the central part of the island, either with the light coloured coco-nut or with nothing at all. In Santa Anna, identification with the snake clan has led to a connection with the snake.

A special point of interest certainly is its connection with the *niu maho*, the light coloured coco-nut : a tree which is also planted, as Mr. Drew and I described, at the *pirupiru* or sacred sacrificial spot by the shore, and in Arosi on the *ariari*. But this coco-nut is connected elsewhere with one of two moieties—in the Gazelle Peninsula, New Britain;¹ and the corresponding moiety, Pakilaba, in Duke of York Island, is further similar to Atawa in that it is said to be characterised by three folds in the palm of the hand, whereas the other moiety, Taragau, has four (Amwea has four in San Cristoval).

The restrictions as to Amwea not eating certain foods after Atawa and the particular foods named are also interesting. May these have been introduced by Atawa ? This seems unlikely ; but I do not know enough of their distribution, or the names for these trees where they are found, to say if this is possible. The coco-nuts and Malay apple might have been introduced by Atawa. The practice of chewing betel nut is comparatively recent, but the plants may not be so. I am told that betel chewing is now rapidly displacing kava drinking in Motlav in the Banks Islands : the people had the plants before, but treated them as of no importance, and have only lately learnt their use from the Solomon Islands. But if they were not in use why should Atawa introduce them ? Some other explanation seems necessary.

Ugi.

I collected one pedigree from Ugi ; I tried also to get the old Ugi terms of relationship, and if I have succeeded, it will be seen that they are very similar to those of Ulawa given by Dr. Rivers ; but Ugi has *asi* in place of *inia*, and *mau* in place of *uweli*.

The relationship terms given in this pedigree are as follows :—

<i>wauwa</i> , grandfather.	<i>aula</i> , brother, m. speaking ; sister, w. speaking.
<i>pwapwa</i> , grandmother.	
<i>ama</i> , father.	<i>waiha</i> , sister's husband, brother's wife, or <i>aiha</i> .
<i>nike</i> , mother.	
<i>mau</i> , mother's brother, sister's child.	<i>keni(inau)</i> , wife.
<i>asi</i> , sister, m. speaking ; brother, w. speaking.	<i>hungo</i> , wife's parents.
	<i>kale</i> , son or daughter.

This system is as simple as that of Ulawa, and scarcely differs from it. *Wauwa* shows the masculine prefix. The use of the masculine prefix in *waiha* with feminine

¹ *History of Melanesian Society*, vol. ii, pp. 501, 503.

relatives is interesting, and as the form *aiha* is also found, perhaps the *a* of *aula* represents *wa*, and is another example of the use of the masculine term for females.¹ The use of the pronoun *inai* instead of *ku* or the possessive *aku*, with the word for wife, should be noted. In the pedigree no grandchildren occurred, but probably *wauwa* and *pwapwa* were used as in Ulawa.

NOTE ON THE POLYNESIAN WORD *Atua*.

On general considerations it seems probable that the original meaning of *atua*, like that of *tataro* and *tamate*, was "ghost" or "ancestor," though it is only the last of these three words which shows this clearly by its etymology.

We have seen in Bauro that *wauwa* and *kauwa*, meaning elder brother and sister or grandfather and grandmother, are found frequently elsewhere, but (San Cristoval languages largely dropping *i*) in the forms *tuga* (Florida) and *tutua*, *tukana* (Fiji), without the sex prefixes of the dual people.

We have also seen that these sex prefixes remain sometimes as *a* in other languages, *aiha* being found in Ugi for *waiha*, and *aula* in Ulawa for *waura*. This last may be, indeed, as Mr. Ivens says, the personal article *a*; but this personal article itself may well be derived from these sex prefixes and be their only, or almost their only, representative in Polynesia; for in San Cristoval the prefixes are used with names.

Tuwa is a very widespread word for "old." It is found in Java; in Borneo *tuai* is "the old man or chief" of a Dyak community;² the Mota *tuai* means old or ancient; and the Polynesian form of it is *tua*.

In Wango *wauwa* is used frequently as a general word for ancestors, probably as a natural extension of its use for grandfather (and *wa* is not now in Wango a masculine prefix). If, as I suppose, these relationship terms *uwa* and *tutua* (and also the Polynesian *matua*, parent) are closely related to the Java word *tuwa*, old, we might expect to find the San Cristoval word *wauwa* as *tua* in Polynesia,³ or it might retain the prefix as *atua*, like the Ulawa *aula* from *waura*, the Ugi *aiha* from *waiha*.

In this case *atua* may be an old Polynesian word for grandfather or ancestor. The difficulty is that *tupuna* is so used, but that may have been introduced with this meaning into Polynesia by later comers, the Kava people of Dr. Rivers; although already in use in this older Austronesian stratum in a different sense.

At all events, seeing that words, whose root is *tua* or *tuwa*, old, are used for relationship terms very widely: brother (if older), father, grandfather, and (in San Cristoval) ancestor; and that the San Cristoval prefixes are found elsewhere as *a*

¹ The personal article *a* may itself represent the *wa* of Bauro. Mr. Ivens says that in Ulawa this personal article *a* "coalesces with certain nouns of relationship which begin with *u*."—Grammar of Ulawa, p. 33, *Journal of Polynesian Society*, xxii, 1.

² *Seventeen Years among the Sea Dyaks*, p. 88.

³ With the meaning elder brother it is found as *tuakana*.

(and in Malaita *auwa* is actually found for *waunwa*), *atua* might well occur in Polynesia with this meaning of "ancestor."

It is tempting to suppose that in the Fijian *tukana*, grandfather (*na* is only a suffix) and the Santa Cruz *duka*, a ghost, we have a similar double use; the *Dukduk* Society of New Britain being called by the old dual word for grandfather or ancestor, and the *Tamate* Society of the Banks Islands by a word of much later origin, though with a similar meaning: "ghost" or "ancestor" societies.

Another possible derivation, however, for these words is that suggested in my book, *An Introduction to the Study of Oceanic Languages*, p. 62, from the root *ruka* or *runga* (Maori) up, above; a derivation which supposes that the soul was thought to go to the sky, and that there was worship of sun, moon and stars among some Oceanic peoples. Thus would the Solomon Island *ta-runga* (Wango, *a-unga*), soul, spirit, receive an explanation; and kindred words such as New Guinea *a-rua*, a spiritual being; Maori *wai-rua*, the soul of a human being, or the ninth heaven, or distant, almost invisible; Tahitian *va-rua*, the soul, spirit. It is quite possible that *t* may be found instead of *r* in some languages, and that parallel forms to the above are Mota *tuka*, the sky; Santa Cruz *duka*, a ghost; and Maori *a-tua*. In Meli (Efate) a human being on dying becomes a *te-tua*, a word which is also used generally for any supernatural being, and is a synonym for *natamate* (Mota *tamate*).¹

To put it shortly, *atua* may be related either to the Mota *tuka*, the sky, or to the Fiji *tuka-na*, grandfather, with intermediate forms *tatua* or *watua* respectively.

1.

—	San Crist.	Malaita.	Florida.	Fiji.	Maori.
Elder brother ...	<i>wa-uwa</i> ...	<i>a-uwa</i> ...	<i>tuga</i> ...	<i>tutua</i>	
Grandfather ...	<i>wa-uwa</i> ...	—	—	<i>tuka-na</i>	
Ancestor ...	<i>wa-uwa</i> ...	—	—	—	<i>a-tua</i> ?

2.

Mota *tuka* (sky), Meli *tetua* (ghost, spirit), Maori *atua* ?

Santa Cruz *duka* (ghost).

Maori *runga* (up, above), Maori *wai-rua*, Tahiti *va-rua* (soul).

Florida *ta-runga* (spirit, soul), New Guinea *aruwa* (soul, spirit).

E.—SANTA ANNA AND SANTA CATALINA.

1.—Totemism.

Santa Anna is quite a small island, across which one can walk in less than half an hour. There are only two villages, one on the lee and the other (the original

¹ *Asiatic Origin of the Oceanic Languages*, p. 19.

settlement) on the weather side, but both these villages are very large as Melanesian villages go, much larger than any on the mainland. The village on the weather side is now the larger, containing between four and five hundred people, but according to native tradition the older village was very much larger than this. The village on the lee side, named Ubuna, was formed as the result of a great fight in ancient times, when a large part of the population were driven out of their home and came across to Ubuna. It is the original village, called Finuatogo, which is here described. Down the middle of this ran a road about three-quarters of a mile long, and the houses were built on each side. Three of the five clans into which the people were divided lived on one side of this road, and two on the other. They were further divided into pairs: Atawa and Amwea, living opposite one another, shared a burial ground; Agave and Garohai, the next pair, also had a burial ground in common, while Pagewa lived alone. Agave, however, had a small subdivision, Pwapwaroro, who lived with them. The subjoined plan will make this description clearer:—

PLAN OF FINUATOGO.

Pagewa Clan	Agave Clan and Pwapwaroro Subdivision		Amwea Clan	
Road.				
Pagewa Burial Ground	Burial Ground	Agave and Pwapwaroro	Amwea	Burial ground
		Garohai	Atawa	
		Garohai Clan	Atawa or Mwa Clan	

These clans are named after animals, except the first two. Pagewa is the shark, Agave the crab, Pwapwaroro the firefly, Garohai the turtle; Atawa is generally called Mwā the snake; Amwea is not the name of any animal, and the word is not known to have any meaning. The native name for clan in Santa Anna, as in Kahua and parts of Bauro, is *waro ni noni*, that is "the string of people,"¹ the idea being explained to me as that of stringing a number of beads together. Just as the village is divided among the clans, so all property on the island is likewise divided; garden land, coco-nuts, and so on: each clan has its own. When a party of men from Santa Anna go on a canoe voyage up the coast to Haununu, the Haununu people remark on the fact that members of different clans will not even then, among

¹ Not *waru inuni*, as in my article in the *Southern Cross, Log, op. cit.*

strangers, eat food cooked in a common pot, but it must be cooked in a separate vessel for each clan. The members of the clans believe they are the descendants of the animals after which the clans are named; stories are told of the original animal ancestor of the clan: no member may eat of the animal from which his clan takes its name, and sacrifices and prayers are regularly offered by the members of clans to their animal ancestors. This seems to present a case of pure totemism, in which all the elements necessary to constitute totemism are present. In the case of the Garohai or turtle clan, the story runs as follows. In very ancient days, before Santa Anna existed, a turtle lived on the neighbouring island of Santa Catalina. This turtle had two children, a boy and a girl. The children noticed that the turtle used to take coco-nuts and bananas and plant them on a certain spot at the bottom of the sea, not far from Santa Catalina, and by and by they asked their mother her reason for planting these things at the bottom of the sea. The turtle, in reply, told her children to make a hook from a piece of her shell, and when they had done this, they then got out their outrigger canoe and paddled over to the spot where the turtle had been busy planting useful trees underneath the sea, and there they cast their hook, which the turtle fixed on to a rock below, and the children pulled lustily, but the rock broke. However, the turtle fastened it to another rock, which was firmer, and the children hauled on the line, and up came Santa Anna all ready prepared and planted; and as for the truth of this story you have only to go to the east side of the island and there before your face is the broken rock where the hook failed at the first attempt. The names of the children of the turtle were Waikariniparisu and Kapwaronaro. The girl Kapwaronaro bore children, and it is from them that all the turtle people come. They throw into the sea money, nuts, and food of various sorts to turtles. None of the turtle clan may eat any part of a turtle, and the consequence of breaking this rule, even in ignorance, is death. The sister of my friend's father unhappily made this mistake: coming home hungry from her garden work, and seeing the turtle meat in the house and thinking it was pork, she eat a little and died in a few hours; nor is hers a solitary instance. The turtle clan is the chief clan on Santa Anna, since to their ancestress the people owe the island itself; and they have a peculiar privilege. At the eastern point is the stone that broke, and there beside it the two children of the turtle turned into two rocks. When boys and girls in Santa Anna come to a certain age they go through a ceremony called *Haaraha*, i.e., "making great," or "becoming a chief."¹ At the final feast, the boy or girl is placed on a platform and decorated with ornaments, and then a boy of the Garohai (turtle) clan goes to the sacred rock-children and covers them over with coco-nut leaves, and on the day fixed for the *Haaraha*, the candidate goes to the Garohai boy and gives him money, which his father has provided him

¹ Apparently all perform this ceremony in Santa Anna; in Arosi it is only done by members of the Araha clan.

with, and they go together to the place, and the Garohai boy then uncovers the two stone children to the gaze of the boy or girl, who now becomes *araha*. It is a time of great feasting and merrymaking, and any Garohai boy may act as master of the ceremonies, some boy probably who wishes to make a little money for himself.

The other clans of Santa Anna may be more briefly referred to. The Atawa clan is called here Mwā or snake, though Atawa is a secondary name. In Bauro Mwā is identified in several places not with Atawa, but with Amwea. There is no meaning attached to the word Atawa, and it is not the name of any animal, fish, bird or snake. There is an object connected with the Atawa people, and it is the same as that found in parts of Bauro; they must not drink of the nuts of the small pale-yellow coco-nut. If Atawa (or Mwā) people of Santa Anna drink this coco-nut, their skin soon shows the white blotches of a common skin disease. No sacrifices are offered to the coco-nut, and there is no idea of descent from it. The Amwea clan have no totem and I have not been able to hear of any restrictions at all imposed on members of this clan. The Pagewa (shark) clan are believed to be descended from sharks, and to be connected with them; they have power to be transformed into sharks, as the following story of Kareimanua will illustrate. They must never eat shark flesh, the consequence of doing so being that they are soon covered with *bakua*, an island skin disease akin to ringworm. They sacrifice regularly in the sea to sharks.

A native drawing of Kareimanua appeared in the paper Mr. Drew and I contributed to the *Journal of the Royal Anthropological Institute* in 1915, but we did not then know the story. Kareimanua was a native of Santa Anna belonging to the shark clan. He was working one day with his father and brother in their yam garden, and as they were all hot and thirsty his father sent the two boys to get some water, and, boy-like, when they got to the stream they decided to bathe before returning. They bathed near the mouth and swam about for a time till Kakafu, the other brother, happened to notice Kareimanua hunching up his shoulders in a peculiar manner as if to resemble a shark, and he called out to him, "Why, Kare, you look just like a shark." Kakafu was out in the middle of the stream, and at those words Kareimanua swam out to him, hunching his shoulders more and more, and frightening his brother, who tried to swim ashore, but Kare was too quick for him, seized him in the water and broke his body in two. He himself did not know why he had done this, and brought the body ashore and tried to fix the two pieces together. While he was doing so another small boy, sent down to see why the brothers were so long in fetching the water, came to the bank and saw Kare looking more and more shark-like and poking about at the two halves of his brother's body. Kare saw the boy, and, impelled by some instinct too strong for him, swam out and away to the open sea, and there he swam about a day and a night, half shark and half human, and then came longingly back to the shore. But the people were all on the watch to seize

him, so off he swam again to the open sea for two days and nights, and then wandered home again, only to find the people watching for him and to escape again with some difficulty. And now he felt he was more shark than man, and taking a hollow bamboo, he swam off to Napasiwai, thirty miles to the westward, and coming up at night into the village he pressed his hollow bamboo down on to the great pudding bowls, and so filling it, returned to the sea, and in the morning the people saw the deep impressions. Often Kareimanua wandered back to Santa Anna, only to be driven off. Many a man, fishing in his canoe, Kareimanua would seize and devour after first overturning the canoe, and at last he was driven permanently away from Santa Anna by a powerful charm, and betook himself to Ulawa, where he still remains. Canoe houses in Santa Anna are full of carvings of Kareimanua, from his feet to his waist an ordinary man, decorated with an ordinary man's ornaments, but from his waist upward a fierce looking shark. When you see the impressions of a hollow bamboo in the pudding left overnight in the bowl, Kareimanua has paid you a visit in the night. Little carved figures of him are very common and sold to traders. No doubt they are afterwards labelled as heathen deities, and not without a show of reason, for Kareimanua, the Shark-Man, is sacrificed to by the shark clan, and feared as an evil ghost.

There is another clan at Santa Anna, the Agave or crab clan, descended from a crab ancestress, to whom all crabs are forbidden as food (to eat a crab means to die on the same day). A subdivision of this is the Pwapwarora or Firefly clan, whose origin was from a firefly who bore a human baby, a girl to whom it gave suck, by a man of Santa Anna. This girl grew up and was married and was the mother of the Firefly clan.

Such is a short account of the Santa Anna clans. In Santa Catalina there is also a clan called after a fish, *Iga tatar*, whose members cannot eat of the fish which is their clan totem. *Aopa* was spoken of as a subdivision or as in some way connected with the Mwā or Atawa clan, and the meaning of *Aopa* did not seem to be known. *Pagewa* have all died out. If the plan of the original village is observed, it will be seen that such a village might have been formed if Amwea and Atawa were the original people, living together but separated by a broad path, as tradition says they once were in Bauro; and then strangers, totem clan people, arrived and simply joined themselves on. *Pagewa* may have been later still. The name *waro ni nuni* was explained to mean "a string stretching out from one beginning," which would describe very well such a formation of the village. The interesting point is that here we have clans quite new to San Cristoval: Agave, Garohai, Pwapwaroro, and *Iga tatar*; and they show all the marks of true totemism; nowhere else, unless among the bird clans, is totemism so clear, and they even are not now sacrificed to, at least on the coast, like the totems of these Santa Anna clans. The burial grounds are in the west portion of the village, but unfortunately I did not examine them.

2.—*Relationship Terms on Santa Anna.*

The relationship terms obtained at Santa Anna by means of a pedigree were as follows (in every case man speaking):—

ema, father, great grandfather.

ena, mother, great grandmother.

aura, mother's father and mother's mother; reciprocally grandchild.

sinamapu, father's father and father's mother; reciprocally grandchild.

epu or *mau*, mother's brother.

esi or *ese*, sister, brother.

koa, cross-cousin; also called *esi*.

kare, son, daughter.

fungo, son's wife, wife's father and mother.

waiifa, wife's brother.

inoni (*aku*), wife.

In my notes to another pedigree obtained here, I have written that a grandchild is *sikimapu*, that *waura* was used for the husband of the sister's daughter, and *keikei* is the word used for mother in direct address. In naming the grandparents, I thought *aura* was preferred for the mother's parents and *sinamapu* for the father's; but either may be used. In my notes to the second pedigree I write *euwa* for elder brother or sister. The words *sinamapu* and *sikimapu* (if the latter is not an error) are very interesting, and also *koa*, which in Arosi means "mate," "chum."

I had only two days at Santa Anna, which was a pity, as my informant, a man named Taonga, was particularly intelligent. He had travelled, and remarked when we were talking of cremation that he had seen cremation practised both in Bougainville and Guadalcanar, but in the former the ashes were preserved, while in the latter (and in Arosi) they were not, but that in San Cristoval a man's bag, weapons and personal property were burnt with him. He was anxious to tell all he knew of Santa Anna. Two things struck me very much at Santa Anna: the elaborate tattooing, more than one usually sees among Melanesians; and secondly, the great position and apparent power of the chiefs; except at Tikopia I have seen no chiefs who seemed to hold such a position in native society, and I was constantly reminded of Tikopia (a Polynesian colony).

The relationship terms are incomplete, and there may be some mistakes in them, so that it is perhaps unsafe to draw conclusions from them. They do not, however, show the masculine and feminine prefixes, though *e* is probably for *ai* in Kahua *wai* or *kai*. The two terms for grandparents are interesting. Generally speaking the terms seem to place the system as coming between those of Bauro and Arosi and somewhat near that of Ugi or Ulawa.

F.—CONCLUSION.

It will, I think, be undisputed that what has been described in Arosi and Santa Anna is genuine totemism.¹ It has been said that the three main characters of totemism are: (1) The connection of a species of animal or plant . . . with a definite social group of the community, and typically an exogamous group or clan; (2) A belief in a relationship between the members of the social group and the animal; a belief in descent from the animal . . . being a frequent form which this relationship takes; (3) Respect shown to the animal, the typical way of showing respect being that the animal may not be eaten.

Now in Arosi each of these characters is present: the totems are birds; the people think the clans are descended from them; the birds must not be killed by their clans, and sacrifices are made to them.

In Santa Anna the clans are also connected with totems, but these are aquatic animals, not birds; the people believe in descent from them; these animals must not be killed by their clans, and sacrifices are offered to the totems.

In both cases we have true totemism, but it is associated with a different social organization, for the two clans Atawa and Amwea, though found with the bird totem clans in Arosi and with the aquatic totem clans in Santa Anna, have not the same characteristics, and cannot be called totem clans, unless they have been identified with other clans such as Hada in Arosi and Mwa in Santa Anna; and moreover, these two occur alone in the central part of the island without any totemistic characteristics.² Besides the pure totemism of the west end of the island and of Santa Anna, we have, I think, another more doubtful form of totemism in some of the clans found along the coast of the central part: the Shark clan, the Octopus clan, the Ray clan; if so, there are three distinct totemistic strata in San Cristoval, overlying a dual organization.

The totemism of Arosi must be connected with that of Bougainville and the Shortlands, in that the totems are birds, and also because it is associated with cremation. Cremation is also found in Guadalcanar; bird totemism has not been described there, but one may be confident that it will be found there also. Bird clans occur in south-east Malaita³ and cremation is known in that region. and is recorded by Dr. Codrington.

The totemism of Santa Anna is typical totemism of its kind, especially as regards

¹ Of course quite different from the Australian totemism. Though both, perhaps, arose originally in ghost worship, their subsequent histories have been different, but the San Cristoval totemism is genuine and definite totemism of its kind.

² But *cf.* note, p. 131.

³ Bird clans in south-east Malaita are the Eagle, Hawk, Owl and Kingfisher; other clans are the Shark (Baewa), Ghost (Akalo); Apoloa, Ramo (Strong), Alaha (Great), but little is known of them. It is said that Shark clan people were thrown into the sea, but Bird clan people buried in trees.

its two clans called Garohai (Turtle) and Agave (Crab). It seems to have been added to a dual organization, Atawa and Amwea, which existed there before the totem people reached Santa Anna.

The dual organization, to which this totem clan organization is added, both in Santa Anna and on the Bauro coast and in Arosi, does not seem to show any signs of totemism. Mr. Drew and I described in our previous paper certain beliefs regarding association with animals and incarnation in animals after death which appeared to us to furnish a possible foundation for a later totemism, but though these beliefs are prominent in Bauro, I am inclined to think they go with the imperfect form of totemism found on the Bauro coast, with the shark, ray, octopus and other clans. Though we also noted association with birds, these birds were not the birds of the Arosi bird clans, except in one case (the *tehe*, hawk).

The dual people seem in San Cristoval to have quite clear traditions of the origin of the two moieties in two distinct races, the one original and the other immigrants, the latter very distinct physically and mentally from the former. These traditional differences are similar to those recorded elsewhere in the New Hebrides, Banks Islands and the islands north-west of the Solomons, but seem to be even more definite here, and to give considerable support to Dr. Rivers' conclusions regarding the dual people, which are adopted here. The relationship systems show a great difference between Bauro and Arosi, and the terms of the former show most traces of the anomalous marriages. The whole argument has gone to prove that this system is an older one than that of the bird totem people. It does not seem possible that the latter can be a modified form of the Bauro system or derived from it. Some of the older Bauro terms have been retained : *gare, asi, waiha, aharo, ina, ama, hungo, wai*, or were already in the Arosi system : others are new terms, *doora, mwarri, uwai, wae, haho, mau, kikii* ; *areha* is used differently. There is, therefore, probably a considerable interval to be allowed for between the settlement of the Bauro people and the coming of the bird totem people. But in this interval should be placed the arrival of the totem people of Santa Anna, since their relationship system is intermediate. The coast of the dual region shows traces of a totemistic people less advanced in their totemism than those of Arosi or Santa Anna, with totemistic ideas rather than true totemism, making subclans of the Atawa and Amwea rather than separate and equal clans ; so these people must be put between the Santa Anna and Arosi bird totem people, but later than the dual people. But the traditions of the dual people seem to make it clear that they must be divided, Amwea being the earlier and Atawa the later. Araha is a widespread clan and in its marriages and descent shows itself rather different from the other clans. To these different peoples must be added the Kakamora and Masi, described in the paper by Mr. Drew and myself : if they are traditions and not fanciful tales which relate to these people, the people themselves cannot be late-comers.

The totemistic people of the Bauro coast are less advanced in their totemism

than the bird totem people of Arosi, or the aquatic totem people of Santa Anna, and are apt to form sub-groups of Atawa and Amwea ; but this undeveloped totemism (which is like that of Ulawa) is also found in Arosi, and I suppose it to underlie the bird totemism. I take as an example a group of people in Arosi who have a special cult of a ghost named Bwarariu. These are Amaeo people ; so far as I know all of them are Amaeo, but they are only a small group, not nearly as large as all the Amaeo, or either subdivision of that clan. Bwarariu was a man of Malaita ; he was killed in the harbour Tawaniahia in south-east Malaita ; his blood mingled with the water of the sea, and he was transformed into a shark. His cult is practised in Malaita as well as in the western end of San Cristoval, and people who cross from one island to the other are forbidden to carry in their canoes a corpse or animal food or bananas, which have been forbidden by Bwarariu, but whether only to his own people or to others I am uncertain. Bwarariu, in his new incarnation, inhabits the sea near Cape Bwarariu at the west end of San Cristoval, so called because the currents and winds make the sea very rough (*bwara riu*) for canoes ; so that though tradition says he was killed at Malaita, his name connects him with San Cristoval. He has several incarnations : the leaf of an *arite* tree on land, and in the sea a mullet, a small fish like a sardine, a shark (the commonest) and a ray. I have seen him in the last form—the most splendid fish I think I have seen ; as we passed the point he came rapidly to the boat, paused close alongside, and then went off like a silver streak in the sea. It is proper to make offerings of shell money and areca nut, but it was calm and the rowers laughed at the idea before we got round the headland ; however, a bad cross-sea got up and I saw one of the natives quietly sacrifice my cold tea to Bwarariu. All sacrifice here, not only those of his own group. He can give a calm or withhold it, and besides sacrifices of food and money it is usual to give him some porpoise teeth. He is also useful for purposes of magic, as the portion of food which a man has been eating is thrown to him, and the man's name mentioned, and then Bwarariu destroys this man when he is fishing.

His followers, of whom Boo of Heuru (Amaeo) was one of the best known, were forbidden to eat white pigs and bananas ; they must not go into a house where a child is born, though they may get food from such a house through a friend ; and a woman must not go near any of them at the time of her menstruation or give anything to anyone of them at such times. The group sacrificed regularly to Bwarariu with burnt sacrifices. Further, the descent in this group is matrilineal, but who the first woman of the group was, or in what way she was connected with Bwarariu, I could not learn. Such a group is called *tai waipo* (*tai*, one ; *waipo*, navel).

Here, then, in the Amaeo clan we have a small group with matrilineal descent, who worship a man of former times who is now incarnate in a shark or other fish or the leaf of a tree. This group further has food restrictions, white pigs and bananas. Bwarariu is said to be a man of Malaita, yet his present habitat is the sea at the west end of San Cristoval. I do not know whether Bwarariu belonged to one of the San

Cristoval clans, but apparently he could not have been Amaeo. The group would not kill a shark, ray, or other incarnation of Bwarariu. It appears to me that such a group might easily in the course of time develop into a totem clan; probably it would be called the shark clan and would have the shark totem and other associated totems. I was surprised to find in this group matrilineal descent: I expected patrilineal; but I suppose it was people with similar totemistic ideas who were the first of the totemistic immigrants, and that they were earlier than the people who came with definite totem clans.

When Mr. Drew and I wrote our previous paper, we had not seen Dr. Rivers' book, but we came to the conclusion that the confusion evident in native ideas as to spiritual beings, and the ideas generally of San Cristoval religion, seemed to point to the fact that we were dealing with two separate cultures belonging to distinct peoples, of which the earlier was the *Figona* or serpent-spirit culture, and the later was the ghost worship, *Ataro* culture.

I propose to go a little farther now on the basis of the present enquiry into the social organization, the consequent separation of the dual people from those with bird clans, and the division of the dual people themselves, and to suggest a provisional arrangement of the people of San Cristoval, and an outline of the probable course which the history of the settlement of the island has taken. This has been partly suggested by facts outside San Cristoval, but the San Cristoval facts seem to need such an explanation, and I think it will be further confirmed by other facts (which I hope to publish later) which deal with the burial rites and death customs, family life, initiation ceremonies of boys, children's games, charms, human and animal sacrifices, property and inheritance, weapons and warfare, houses, arts and crafts and further traditions and tales, for which there is no room in this paper. Fresh facts are continually coming to light, giving one the feeling that San Cristoval is quite unexplored and that one has only gone but a few yards into the virgin forests, and it seems perhaps over-early to form any theory—the following is only a working hypothesis which may have to be modified later.

It seems that the first inhabitants of whom we have any trace are the Kakamora or Pwamora,¹ whom in our paper Mr. Drew and I described as the fairies. The word *mora* means native or original. When the Amwea came to San Cristoval, they perhaps found these people in possession and drove them back to the hills. They seem to have been a people of very small stature, with straight hair, wandering from place to place in groups, without houses, gardens, or even a knowledge of fire and cooking, and living in caves. These are the native traditions given in the earlier paper by Mr. Drew and myself.

Then came the Amwea. What this word means I cannot say, for the derivation from *Mwaa*, a snake, seems hardly worth consideration. They seem to have been

¹ A word which in Arosi has become *Pwaronga*.

people physically like the modern Papuans, short, dark, vigorous, fond of fighting, split up into hostile villages. At present it seems impossible to disentangle their religious ideas and material culture from those of the other moiety of the dual people who followed them. They did not speak Austronesian languages, if, as I hope to show later, there are non-Austronesian elements in the dual language.

Then came the Atawa, a people very different ; and they came probably after a very long interval of time. (These should correspond with Dr. Rivers' "Proto-Polynesians.") They were fair and tall, and had a much higher culture than the Amwea. Probably it was they who introduced the round house, once general in San Cristoval, unless this was the form of house still earlier ; and certainly it was they who brought the first Austronesian language, which they imposed on the Amwea, probably in all parts of the island. It is not possible on the strength of our present knowledge of San Cristoval to be sure which ideas and crafts were Atawa and which Amwea, but at all events to these two people belong the worship of serpent *figona* or spirits, in sacred groves. They were agricultural people and perhaps brought taro to San Cristoval, since this is the chief food of the bush people and not prominent on the coast, and probably they brought many other plants and trees, possibly coconuts, at any rate some varieties. They had a cult of trees and offered human sacrifices for the increase of crops (the evidence for this will be given later) ; their serpent worship was connected with sacred stones. It was they who introduced the wooden gong. The San Cristoval evidence seems to point very strongly to the gong belonging to the dual people ; their great use of it in sending messages, especially where, in the interior, no totem people are found ; their numerous tunes and their elaborate care of the gongs, which will be more fully described later on ; the evident inheritance of the gong in Arosi from the dual people ; all point to the gong being theirs. Dr. Rivers, indeed, finding the gong stuck up on end in a region where secret societies are very strong, and there marked to represent a human figure, concludes that the gong belongs to the people of the secret societies ; but it seems illogical to infer that the gong belongs to people who use it in so unusual a manner ;¹ and at all events the San Cristoval evidence points to an opposite conclusion.²

If the dual people worshipped serpents and had a cult of trees, such ideas should be found elsewhere where the dual people are found, and that will be a test of the truth of this hypothesis. They should be found, for example, in Polynesia, if the Atawa were the Proto-Polynesians. Taylor says the sacred grove of the Maori "formed the most conspicuous feature in his religion," and Mr. Best's researches seem to confirm the fact at least that the Maori had much respect for trees and believed in a "soul" of the forest. Taylor also says the reptile gods of the Maories "were considered the most ancient."³

¹ But when Dr. Rivers comes to the Bismarck Group the evidence for his view is strong.

² Since writing this I have found a stone gong near Wango.

³ *Te Ika a Maui*, pp. 98, 48.

The only traditions of Atawa connect them with trees. They are often connected with the pale coco-nut, and in Rafurafu they originated in a woman saved by a *kafika*¹ (Malay apple) tree.

In the Banks Islands the *kolekole* was probably an institution of the dual people : it was a general gathering at which all the people of the place could be present, women and children as well as members of the *suge*. *Palako*, *kalato* and coco-nut logs, gaily decorated, were carried to these feasts.² There was also a great *kolekole*, probably the greatest, which has not hitherto been described, in which a sapling of the Malay apple (*gaviga* in Mota) was treated with great solemnity. My informant is Gilvelte of Motlav. Gilvelte says this *kolekole* was only made at very rare intervals ; he is himself a man of about thirty-five ; he has known two such *kolekole* and he thinks another took place when he was very small, so that we may allow an interval of at least six or seven years between each, and probably it is held less often than that. The people gather from the whole island, and in most respects it is like an ordinary *kolekole* : great crowds of people, a party of dancers specially dressed and decorated for the occasion ; pigs to be killed, and so on, as described by Dr. Codrington and Dr. Rivers. But it differed from others in several ways, first in the long interval between successive celebrations, and then in the months of preparation, as special gardens were planted of taro, sugar-cane and yams, and a great deal of food prepared. Then a wooden platform was built in front of the *gamal* (the men's house) and with great solemnity a sapling of *gaviga* was cut down, the upper shoot of the tree, stripped of its leaves, gaily decorated with white fowls' feathers, crotons and cycas, and the whole brought and set up at the corner of the platform, on which the food specially planted for this *kolekole* was piled up. Then as usual the dancers came out and danced, and old men from the *Lano* rank or higher in the *suge* mounted on to the gable ends of the roofs of certain houses and addressed the people, as Dr. Codrington describes. (This is only allowed to men of *Lano* and higher ; between *Lano* and those lower there is a great break in the *suge* ; for example, it is only above *Lano* that men prefix their *suge* rank to their names, and only above *Lano* that they make the posts of their houses of *qatia*, tree-fern, from which arrows are made.) But that this is not a *suge* rite seems probable, and anyone of any rank in the *suge* can give the *kolekole*. He then finally hands on the forefeet of the pig he kills to any man who is willing to undertake the next celebration of this *kolekole* of the *gaviga* tree, probably some man of another village. There are two other points of interest in regard to the *kolekole* : no stone is brought and no *wona* or stone platform made, but a wooden platform is made instead of the usual stone one, and secondly, the giving of the *kolekole* does not entitle the giver to wear an anklet or necklace of red feathers. These two things seem to separate it definitely from the

¹ This is the name of the chief division in Tikopia, and the *Kafika* there have a sacred stone.

² *The Melanesians*, p. 111, where, however, only *palako* logs are mentioned.

suge, for stone work and red feathers are both very characteristic of that institution. Further, the food is put on the platform in this *kolekole* only.

The *kolekole* embodies a custom,¹ probably earlier than the coming of the *suge*, a custom of the dual people, a cult of trees. It may be compared with Bishop Newton's account of the *Walaga* in British New Guinea.² The distinctive features of that, according to the Bishop, are a special dance, and a bringing in of a mango sapling, the varied tribes that combine and the ceremonies connected with it; but the central idea is certainly the mango sapling, which "is carried with great and solemn ceremony to the platform" made for the occasion, its leaves and branches stripped (as are those of the Malay apple sapling at Motlav). There is also long preparation of food as in the Banks Islands, a celebration at long intervals, and the arranging at each feast where and by whom the next of the series is to be given.

The only feast at all resembling this of which I have heard in San Cristoval is the one given in Bauro at the termination of a war. The givers of the feast are those on whose account the fighting began, and when the fighting ceases all who have been involved on their side, perhaps from thirty miles away, people of many villages, come and receive payment in money and are feasted. A high platform is set up, and three saplings of the *Buru* tree from which the people make the pitch for their canoes, are chosen, stripped except for three branches on which the leaves remain, decorated with the young shoots near the top of the sago palm, and set up two at each corner of one end of the platform and the third at the middle of the other end. The people who have taken part in the fighting receive money from the platform, pigs are killed and a feast made. Such a feast is made at long but unequal intervals. There is a similar custom in Ulawa, but the tree is a *Barringtonia*, and only one is set up in the middle of the platform. These may be mere memorials, but the setting up of the mango and Malay apple saplings seems more than that, and generally speaking this cult of trees seems to be associated with the dual people. Mr. Drew and I, in our earlier paper, described the sacrifices to the serpent-spirit Agunua in the sacred grove, and drew attention to the fact that the sacred *Pirupiru* tree had later given its name to a bare rock by the sea, owing to an immigration of a people with other ideas, a people who worshipped ancestors embodied in sharks; and we mentioned other sacred trees such as the *arite* (Catappa) and *ngari* (Canarium). I hope to return later to the subject of sacred trees, but will here mention what is now found in the Bauro bush. In the gardens certain plants of a sacred nature are planted: dracaena, coleus and amaranthus. On the *torona*, or raised burial places, certain trees are planted: croton, coco-nut and *mahe* (Panax). In the sacred groves certain trees are found: coco-nut, *gatoga* (a variety of Canarium), and those mentioned above. There are certain trees, not planted but sacred, round which, in this

¹ Cf. the Santa Maria *kolekole* of the prehistoric cultivation mounds, described by Mr. Freeth in the *Southern Cross Log*, 1913, xix, 12, where the *kolekole* is a memorial of an ancient custom.

² In *Far New Guinea*, Chapter xii.

dual region, the dead are buried in concentric circles,¹ in a sitting position, with knees drawn up and with hands resting on lap or on drawn-up knees or tied to the neck; both hands and feet tied; these trees are *awa*, *topaga* and *abaporo*, the last a banyan. Finally there is the *buru*, the sapling set up as described above; and another class of semi-sacred trees such as the *hara* (*Barringtonia*), *gerawa*, *gari* (mango), *gahika* (*Eugenia*), and others. From the manner of burying round the banyan and *toba* trees and from other facts, this cult of trees should apparently be associated with the dual people.

We described in our earlier paper the *ataro*, called in Ulawa *Pwai*, and in the Banks Islands associated with the *Mwai*, an amphibious snake, as belonging to an immigrant culture, and therefore, since it is an *ataro*, to be associated with the immigrants who followed the dual people. It is therefore interesting to note that in Melanesia it always changes into an animal: a brush turkey, a bird, a sea-snake, or a butterfly, just as these totem people expected to do themselves, and it is charmed and driven off by the use of sacred plants: croton, dracaena, or amaranthus.

It is the dual people in San Cristoval who show in their relationship terms the clearest traces of the gerontocracy supposed by Dr. Rivers to have been once the social organization in Melanesia.

It is these people with whom I would associate provisionally a cult of trees, serpent worship in sacred groves and burial in a sitting position, without attempting to decide to which moiety these customs belong. It is a pity serpent worship elsewhere in Melanesia has not been more carefully recorded. I have heard of it from natives as formerly prominent in the Banks Islands, Santa Cruz, and Florida; and feel confident that traces of it, at any rate, will be found widely in Melanesia.

After the coming of the Atawa a considerable period must have elapsed to allow for the fusing of Atawa and Amwea, and the formation of the peculiar dual society, and besides when the next Austronesian-speaking people arrived, they were people of a very different culture, though not with a very different language so far as one can judge.

These people may be called in San Cristoval the Abarihu,² since it is they of whom there is a definite tradition that they swarmed along the beaches and up the river valleys, forming settlements and naming them by the names they still bear. They were Austronesian-speaking people and similar to the Atawa, but they brought new ideas. They seem to have settled all along the coast, and to have overrun completely Santa Anna, and to have come in successive waves at fairly short intervals. The first were the people now best represented along the Bauro coasts, though there are many traces of their ideas in Arosi. They believed in transmigration into animals

¹ It may be noted that *figona* are specially connected with trees, and especially banyan trees, as described by Mr. Drew and myself.

² Abarihu merely means "the people who followed the coast"; the full form is Abarihurihu.

after death; and even during life, but they were not yet divided into totem clans like the later waves which followed them: they had totemistic ideas but were not totem people; they were like the Waipo group of Arosi. They worshipped the dead and carefully preserved the bones (and especially the head). It was such people who formed the *suge* in the Banks Islands; and the contemporaries of the *suge*-founders settled in Santa Anna, probably not quite the first of the totemistic people, but a slightly later immigration of them. The first to come established shark worship, and were associated after death with aquatic animals or birds. The cult of shark and ray (and frigate-bird probably) in Arosi belongs to this first invasion, and they introduced their culture firmly in Ulawa and Ugi. They exposed their dead in canoes and bowls, and probably it was they (one of their immigrations) who built the truncated pyramidal mounds (*heo*) of the *hera* or burial places, on the top of which they preserved their dead, till the bones could be collected and deposited in a stone box (*hau suru*) or in caves. Some of these people practised a kind of embalming, placing the body so treated in a canoe. They probably introduced the long house and the double house.

It is impossible to say at present from the San Cristoval evidence to which influence many parts of San Cristoval culture belong, and I may give one example. There is some evidence of a cult of the moon and stars, and perhaps of the sun also; but it is hard to decide to whom it belongs.¹ There are a few myths: it is said of the sun and moon that they kept crossing a great bridge in the sky, the moon fleeing from the sun, till finally the moon fell into the sea, and has since given but a cold light and is the shadow of her former self. A woman plaiting mats is said to sit in the moon. There is a children's song in Bauro which they sing at night when, towards morning, they wake with the cold and lie shivering waiting for the day. The words are as follows:—

Tangisi, tatangisi, wafakifata
Naru gogofena tangiana tangi
Tangi marakáraka, tangi marapwasia,

of which the translation runs:—

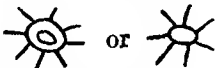

Enlighten, enlighten, brother and sister-in-law,
 Bring hither the light of day,
 The splendid light, the shining light.


This is a song to the sun and moon; it is in the Bauro language, the language of the dual people, but it is on the coast that I have heard it. It calls the sun the

¹ "The only item pointing to anything like a system of star worship" among the Maories was found by Mr. Elsdon Best in connection with agriculture. *Transactions New Zealand Institute*, xlii, p. 448.

sister-in-law of the moon, the explanation being that the moon (*warowaro*)¹ is married to the stars (*marama*), who are the *kasi*, younger sisters, of the sun (*arito*). The use of *ifa*, properly a dual people relationship term (as the use of the masculine form *waiha* for feminine relatives in Arosi shows) excludes the Arosi totem people, though not perhaps the Abarihu. Moreover, children's songs are generally very old, so that this may be a song of the Atawa, but it is uncertain.

Another way in which we may approach the question is by considering the use of tattoo and sacred emblems. Probably if Christianity were now to disappear in San Cristoval the sacred emblem of the cross would be found when all else was lost or almost lost in the outward culture. So we find a large use in San Cristoval of emblems which probably represent the moon and perhaps the sun. There is a mother-of-pearl crescent ornament which is called *tahi warowaro*, *warowaro* being a Bauro word for moon. There is also a large round shell disk worn on the forehead, which is called in Arosi *matesina*, "the face of the sun." This is made of the giant clam. Another made of the shell *dahi* is called *hura*, the moon. A similar disk in Santa Cruz, worn on the breast and made of the giant clam, is called *tema*, the moon.² Then there are tattoo marks; these are often the evening clouds of sunset, but the sunset clouds do not seem to be commoner in Bauro than in Arosi. The other most

common tattoo mark is that of a star, of which there are two forms,  or  either one or two circles with rays. It is important to notice that these do not represent the sun, but stars; but, again, it can hardly be said they are commoner

in one part than another. The figure  is tattooed on Araha men; but cut, not punched, and represents the sun. There are certain tattoo marks which go definitely with the dual people, especially the *arite* tree, but the marks connected with stars do not seem to do so. Another line of enquiry brings us to the small shell disks now used as money. This is perhaps a secondary use, as the disks are also used for belts. The fine white variety are used for belts, and the coarser white and red varieties are used for armlets and anklets at feasts. These disks are also used in Santa Cruz for belts, but not for money. They seem to have a sacred character, for they were much used in sacrifices, and were used in ancient times in sacrifices to *adaro*, and similar disks in Florida are called *rongo*, which may be the same word as the Mota word *rongo*, sacred. There are four kinds used in Arosi and five kinds in Bauro. The large red disks are called *tao* in Bauro, *dao* in Arosi; the small fine white

¹ The moon, in the Bauro peninsula itself, and in other parts of the Bauro district, is called *hagaiha* (Rafurafu *fageifa*). *Haga* is the causative prefix in Bauro; so apparently the moon is called by a relationship term, *iha*! The song explains, perhaps, this very unusual word for moon; which might otherwise have been set down as "Papuan."

² In San Cristoval tortoiseshell figures of frigate-bird and seagull are fixed to the *matesina*, and these must be associated with the Abarihu.

ones used in belts are called *ngisi* (the white of the coco-nut) in both places. But in Bauro the finest red disks are called *gapu na arito*, i.e., the blood of the sun, and strange to say, the white money of Arosi is called *bunarito*, a word whose meaning is not known there. Evidently the disks belong rather to Bauro than to Arosi, for it seems a misuse of terms to call white money sun-blood, and besides, the word has lost its meaning in Arosi. The large white disks are merely called *ha'a mahui*, white *ha'a*, in Arosi; but in Bauro *hura toto*, i.e., full moon; *hura*, however, is not a word used now for moon in Bauro, though it is so used in Arosi. On the whole, these disks, which seem to be originally connected with a cult of the sun and moon, belong rather to Bauro than to Arosi. Their use as money in the *suge* of the Banks Islands may have been quite secondary, they may have been a sacred ornament of the dual people, and adopted in the *suge* as money, and if so, the dual people or the Atawa, who had a cult of sacred trees and serpent worship, may have had a cult of the moon and stars and sun. But the San Cristoval evidence, if very scanty, seems slightly in favour of the hypothesis that this cult belongs to the Abarihu; or that the sun cult belongs to them, and that of the moon and stars to the dual people.

Outside San Cristoval not much evidence has been brought forward, but Dr. Rivers is inclined to associate a cult of the sun and moon with the *suge*. Some of his evidence, however, is faulty. He gives a photograph¹ of a door at Merlav on which the Tamate Liwoa society is represented by "a figure with rays." Banks Islanders, however, say these represent the cycas, and not the sun. Dr. Rivers also says² that the drawing of Tamate Liwoa on this door "is accompanied by a number of representations of the sun." Banks Islanders, again, say that all these are figures of stars, and as the same figure is tattooed on many Banks Islanders, it may not be specially a *suge* sign. But on the whole Dr. Rivers' evidence is in favour of this cult of sun, moon, and stars belonging to the Abarihu (his Kava-people), and this is not impossible from the San Cristoval evidence, which only seems to show that the cult does not belong to a later immigration. This has been given as an example of the difficulty of assigning many of the features of San Cristoval culture to any particular body of people, with the present evidence.³ It appears to be the Abarihu, who had the custom of prefixing *Sau* to name of those who showed especial prowess in certain directions. In San Cristoval, those who were connected with ghost sharks, and who were also leaders in war, prefixed *Sau* to their names, and the same prefix was commonly used in Ulawa with the names of the ghost sharks themselves, who became the gods of war and fighting. If Dr. Rivers is right in thinking that these people became the chiefs in Polynesia, it accords well with the fact that *Hau* is a word used in Polynesia in connection with the high chiefs. Fornander writes, "I am inclined to think that the oldest Hawaiian designation of the highest rank of

¹ Plate IX, *Melanesian Society*, i.

² *Ibid.*, vol. ii, p. 424.


³ A better knowledge of the pure dual region of the interior of Bauro may solve this difficulty.


chiefs was *Hau*, which word meets us with nearly the same meaning in the Samoan and Fijian *Sau*, the Tongan and Tahitian *Hau*, the Rarotonga and Mangareva *Au* the New Zealand *whakahau*.¹ The name of the Arosi *adaro*, *Hau-di-bwari*, is worth noting, but a snake *figona* was also called *Kahausibwari*.


The next, and probably last large immigration before the coming of the white man, was that of the bird totem people. Some interval must have elapsed to allow for the considerable development of totemism, which they brought with them. With this bird totemism is plainly associated the practice of cremation. The language of these people shows in its relationship terms some unusual words. The people seem to have got only as far as Wango, and do not appear to have reached Ulawa or Ugi, though they seem to have reached Saa in Malaita; but clans found in Ulawa and Ugi at the present time are the earlier Abarihu clans: Akalo, Paewa, Amwea, and bird clans are not known to me there.

I have not attempted to assign any special place to the clan of chiefs—the Araha. They would seem to have belonged to the first Abarihu immigrants, and possibly they were their chiefs, and therefore continued to practise patrilineal descent and to intermarry—two facts which must be accounted for. The things in which they differ from men of other clans are chiefly as follows:—

(1) *Karaoa*, a kind of embalming is used in their case, and is associated with burial in a canoe called *aháaha*.² Shavings of the tree called *oa* are prepared; the body of the dead *araha* is washed twice, first just after death and secondly before being put into the canoe; the *oa* shavings are wrung out over the canoe, and are then placed in it, forming a bed for the body; over and surrounding the body more *oa* shavings wrung out are packed, and in this way it is preserved for some time, allowing relatives at a distance to come and view it. I have not seen this, and have written down a native's description.

(2) Only *araha* can wear the *matesina*, face of the sun, and the sun tattoo , the frigate-bird tattoo, and the *bwari* belong specially to them. What the *bwari* represents I am a little doubtful, but I think it is the web of a variety of *bwari* called *bwari nunu*, which, unlike the ordinary *bwari*, makes a web, which it agitates violently when disturbed, hence its name. The head of Arosi babies is shaved to

leave a lozenge of hair called *bwari*, . At Kahua (Torora) I have seen a different tattoo called *pwari*, which is said to be plaited on bags, but the meaning of

the  design was not known there.

¹ *The Polynesian Race*, i, 67; cf. the Maori *hau*, famous; "he ingoa hau tenei ingoa," Williams, *Maori Dictionary*.

² The name means "high, lofty" (sometimes, "the sky"), probably because these canoes were elevated on high poles or trestles.

(3) Descent may be reckoned from father or mother ; and boys of other clans may be raised to the status of *araha* by expenditure of money in giving a series of feasts ; tattooing the figure of the sun being allowed only after the final feast was given.

The *matesina* usually has tortoise-shell ornaments fastened to its face representing the frigate-bird or seagull (*gaura* or *maahe*), the latter of which appears on the bowl in which sacrifices are offered for warriors, and of which a figure has been given.

Araha may have been the chiefs of the Abarihu or a separate body of them. If a cult of the sun is Abarihu, it evidently belongs to them ; but there is nothing to associate with them a cult of the moon and stars, which I have supposed to belong to the dual people.

Later, probably, than the bird totem people must be put Dr. Rivers' Betel people, if they have reached San Cristoval at all, for Arosi tradition speaks of betel-chewing as a comparatively late introduction, and remembers the time when the areca palm was introduced, or at any rate was so rare that people went long distances to buy the nuts. The areca nut is called *bua*, the betel leaf *amadi*, and the lime *hasiahu* (*ahu* is the branching coral). But the use is fairly old, as *bua* is used in many sacrifices (thrown into pools sacred to *hiona*, spirits), and I have a very much worn stone cup used for the mixture in the case of sacrifices to *adaro*. Lime also is used with all spells for killing, etc., and without it they have no *mena* or power ; so that these two ingredients at least seem part of Abarihu culture, and as far as San Cristoval evidence goes, one would be inclined to put betel-chewing as belonging to Abarihu. But the Abarihu who reached the Banks Islands and Polynesia do not seem to have known the custom, and therefore it must belong to some later immigration, perhaps the bird totem people ; or the late influence bringing in patrilineal descent, which has reached the north-west corner of San Cristoval.

Earlier than betel-chewing in San Cristoval, but belonging to the Abarihu, was the practice of kava-drinking, of which there are clear traditions in Arosi. The usual practice was to pound up the root of the *awaawa* or *bae kakawa*¹ on a large hollowed stone ; a little water was added and the mixture wrung out into a small coco-nut drinking-cup called *kuku-manu*. At the *Rikumae*, or mourning ceremonies for the dead, when a strict fast was kept, this mixture was drunk ceremonially. It is said the root was occasionally chewed, but the above was the normal method. I am uncertain whether kava is still drunk in the bush, probably it is ; the root is still chewed by some. Betel drove it out.



I have not yet considered the Masi, the people whom Mr. Drew and I described

¹ *Bae* is a word whose meaning is not known ; but cf. Maori *paekura*.

in our previous paper. They are specially connected by San Cristoval tradition with Ugi (properly Uki), which is called *Uki ni Masi*, where they are said to have had large settlements, but they are widely known in Ulawa, Malaita and San Cristoval. Perhaps they were a people living on Ugi before the Atawa Proto-Polynesians came to Melanesia, and related to the Kakamora; but they are not thought to be connected with the Kakamora or the Amwea in native opinion, and stand quite by themselves: no other people have so many stories related of them by the San Cristoval and Ulawa people of the present day.

I hope this short sketch of San Cristoval history will not seem too imaginary, but I think it will prove to be in the main well founded, partly because it is in general agreement with other facts outside San Cristoval. Bishop Newton writes of totemism in New Guinea that "the commonest totem is a bird"; "there are other totems nearly always subsidiary to a bird, as fish, snakes, and also more rarely stones and trees." This we should expect if bird totemism is latest, aquatic animal totemism earlier, and a cult of trees and sacred stones earlier still. That, in short, appears to me to be the history of San Cristoval.

It is not possible to disentangle elements of several civilizations which have become mixed together if one considers a single small area like this. The wooden gong, for example, seems on the San Cristoval evidence to belong to the dual people, but on the evidence of the Bismarck Group to belong to the secret societies, and therefore to the Abarihu. But may not the secret societies have incorporated much from the Atawa civilization which preceded them, for example the wooden gong, and the shell disks as money? These societies consisted not only of immigrants, but also of dual-people members, and the latter may have introduced some of the features of the societies. If the Atawa had a cult of trees, may not the secret societies have adopted some of its features, if only for the sake of their foreign members? so that when we find sacred trees, or decorated logs (as in the *kolekole*), associated with the societies, we should consider these to be parts of the earlier culture. Dr. Rivers gives a photograph of a sacred house in the Reef Islands in which carved "stocks" are set up and addressed with prayers. Mr. Nind describes to me a similar house in Santa Cruz, called *ma-duka* or *ma-kate*, oblong like the *ma-dai* or men's house (Dr. Rivers spells this *mandwai*, and thus disguises its derivation: "sea-shore house"). *Ma-duka* means "ghost-house," and its shape and name naturally place it as belonging to the Abarihu or Kava people. Its posts are painted white, and on the walls are drawings in black and white of men, pigs, and conventional designs. It also contains "stocks," a row of carved logs set on end, of different heights. These are connected with different spirits: the Sun, the Sea, the god of Fishes, the god of Rain, and the god of Crops, and at the foot of these offerings of food are placed; for example, when a man goes on a voyage he places food at the foot of the upright log which represents the spirit of the Sea. I have found such posts in the Bauro bush, posts with no human or animal figure carved on them,

and dedicated to *figona* spirits.¹ May not the stocks of these Santa Cruz ghost-houses go back to Atawa times? and similarly the logs of *palako*, *kalato* and *matig* of the Banks Island *kolekole*, and the wooden stocks of Tahiti described by Ellis? Everything found in the *Suge* does not necessarily belong to the "Kava People."

If this provisional hypothesis of the history of San Cristoval should prove to be in the main a sound one, it will have an important bearing on the study of San Cristoval languages, for it will become apparent which are the older, and it may even be possible to trace the peoples who spoke them to their original homes. This division of the languages into earlier and later strata is a task that, as Dr. Rivers points out, has not yet been undertaken in Melanesia. I have given an example of the relic of a language that was possibly one of those spoken by Amwea, and I think when I come to deal with children's games and charms I shall be able to show there are other fragments of such languages. But this analysis cannot be done by any haphazard comparisons such as one often sees, and the view taken in this paper is in this respect different from Dr. Rivers', for though I have made no attempt to assign to any people its proper share in the evolution of the present languages of San Cristoval, the view taken is that the chief rôle has been played by the Austronesian language of the Atawa or Proto-Polynesians, and not, as Dr. Rivers thinks, by the Abarihu or Kava People; that this Atawa language, the foundation of the present languages of Polynesia, was imposed on the Amwea and other people like them, and that the Abarihu have had no such profound influence on the languages of Melanesia, but merely modified the earlier Austronesian tongue.

It is an ungrateful task to criticise, and never very difficult; nor is it possible to examine thoroughly Dr. Rivers' linguistic argument, which is long and complicated, without a minute discussion, which cannot be undertaken at the close of such a paper as this; but the whole of his scheme has such an important bearing on the history of San Cristoval that I cannot leave it without a short criticism of some of its chief arguments. I will confine myself to the following two points: (1) his argument from the words for relationship terms; (2) his argument from "possessive pronouns."

In the argument from words for relationship terms, Dr. Rivers' point is that words for certain relationships are widespread, and for other relationships show great variety, and that this variety is found where the relationships are such as would not be affected by the coming of the Kava people, and the widespread words are found for relationships which he shows to have been greatly affected by the immigrants. For example, the words for mother, child, and mother's brother show variety, while those for father and grandfather are widespread. But when his argument is examined in detail it breaks down. Let us take the case of the terms

¹ These are different from the carved posts (in human form) found in gardens in the interior, and called the guardians of the gardens.

used for mother's brother, which Dr. Rivers takes to be the most striking case of diversity of nomenclature. This diversity can be explained by the following considerations: (1) The words used appear usually at other levels of language, and their use for mother's brother depends on anomalous marriages: examples are, *vuno*, ordinarily parent-in-law (and one of Dr. Rivers' widespread words); *tumbu* (ordinarily grandparent (and another of Dr. Rivers' widespread words)); (2) they are descriptive terms: examples are, *ngandi* (which Dr. Rivers himself says is a corruption of *ngane tina*, "mother's brother"), *tuatina*, which is the same (both these show again examples of Dr. Rivers' widespread words); *ingoa* (which means "name"); (3) they are variants which Dr. Rivers does not recognize as such: examples are, *koko*, which he elsewhere recognizes as a variant of *tupu*, so that it falls under heading (1); *momo*, which the San Cristoval terms given in this paper show to be only a variant of *mau* or *marau*; (4) they are pre-Melanesian words: examples, the Savo, Santa Cruz, and Vanikolo words; such words, taken from languages which are known to be non-Melanesian or very unusual forms of Melanesian languages, are not useful for sound comparison. The words in these languages for "father," a relationship the term for which ought not to vary according to Dr. Rivers, show just as much variation as the words for mother's brother. It is such words as these—widespread words usual at a different level of language, descriptive words (equally widespread), disguised variants, or really foreign words—which constitute the whole of the "striking diversity" on which Dr. Rivers' scheme rests. Take them away and the diversity tumbles down like a house of cards. But the point is that Dr. Rivers rests the diversity on a theory of Papuan influences.

In the argument from "possessive pronouns," Dr. Rivers describes the two kinds found in Austronesian languages, those which he calls "true possessives" (they are not really so, for they are simply, as he says himself, personal pronouns in juxtaposition, and are sometimes in San Cristoval, New Guinea, and elsewhere, the object of transitive verbs), and those formed by suffixing these pronouns to a possessive noun or particle. The latter he takes to be "pidgin" talk, and these forms with possessive nouns (such as *agu*, *amu*, *ana*) to be the older; perhaps he does not know the number of such possessive nouns, and the delicate shades of meaning they express, so that they are one of the choicest possessions of Oceanic grammar; did he realise this he would realise that they could not have originated in pidgin forms of a *lingua franca*. But he takes them to be old forms, and as they are the Polynesian forms, that language too must be a *lingua franca*, so that Polynesian languages become the product of the mixing of two *linguæ francae*, that of the Proto-Polynesians, and that of the Kava people, both something like modern pidgin-English in Dr. Rivers' scheme. It seems rather hard on the Polynesian languages; but Dr. Rivers lands himself in a much worse difficulty. The "true possessives" (*gu*, *mu*, *na*) belong to the Kava people, and Dr. Rivers has to explain why they are used for certain classes of words, for he never shirks difficulties. They are used for

certain relationship terms because these are terms newly used in the singular by the Kava people ; the communistic dual people never needed to say " my father," and so on, but with the coming of the Kava people they did. However, Dr. Rivers finds *gu, mu, na* used with parts of the body, and says honestly : " Here I must confess I can see no such clear motive for the use of the true pronouns," and can only suggest that " there may be some feature of the interaction between Kava and dual peoples which gave to parts of the body a social importance." But these pronouns are not only used with parts of the body, but with parts of any whole, such as the bark, seed, leaf, branch of a tree ; the handle, blade of a paddle, and so on ; they are also used after nouns with certain (old) terminations, *e.g.*, in San Cristoval : *tahinga*, life, *bwauha*, smoke, *asuha*, smoke or spray, *daoha*, sickness ; with verbal nouns ; with nouns of position (San Cristoval *muri*, behind, *ahora*, above, *odo*, right, etc.) ; and with a large number of other nouns. How is Dr. Rivers to explain how the interaction of the Kava and dual people affected all these words ? Evidently his whole argument from possessives leads to nothing. Nevertheless, there must be some reason, as he says, for the varying use with relationship terms. Dr. Rivers recognizes a possible source of variety of nomenclature in later bodies of immigrants, but he hardly allows sufficiently for it. The bird totem people of Arosi, for example, seem to have affected considerably the relationship terms of that district, and these and other immigrants may have had a considerable influence on the languages.

The following terms of their system are like those of the Bauro dual people, and most of them are widespread terms :—

Ama, ina ; gare ; asi ; wai ; mau ; hungo, iha.

On the other hand, the following terms are strange, not common at any rate, in Austronesian languages, and might even be taken for a mark of Papuan influence, were they not clearly bird totem people's terms :—

Doora, haho ; uwai, wae ; mwarii ; kikii.

Now these bird totem people may be Dr. Rivers' Kava people, in which case the Kava people have given a Papuan¹ appearance to the terms of this region, which hitherto has been characteristically Austronesian, or, if these people are later than the Kava people, they have still been the agents by which the relationship system has been given a non-Austronesian appearance, at any rate at first sight. Probably these people were a very late immigration of Abarihu or Kava people. Even if Dr. Rivers were right, and it was the earlier Kava people who altered the old Bauro system so as to give it its present Austronesian character, still a later immigration has again altered it, so as to give it what (were we not sure this is a late immigration) we should probably have described as a " Papuan character," a term far too easily used, especially by those who approach the languages from a Polynesian standpoint.

¹ Pre-Melanesian would be a better term than Papuan.

I think that Dr. Rivers has assigned too great a linguistic rôle to the Kava people. Putting Indonesian languages aside for the moment (though of course their relation to other Austronesian languages and their general character cannot be neglected), and comparing Melanesian and Polynesian languages, one fact needs to be continually reiterated, and that is that the Melanesian languages show the more archaic forms of those elements which both have in common. Dr. Codrington first showed this, and Mr. S. H. Ray has strengthened his argument; more lately, approaching the subject from a special point of grammar (the suffixes), Rev. W. G. Ivens has immensely added to the force of this argument, with a great wealth of illustration, and there can be no doubt that as regards their common element (and it is only that I am referring to), Polynesian language forms may be justly described as, upon the whole, decayed, broken-down and simplified Melanesian forms. Those who perhaps still doubt this, would be well advised to study Mr. Ivens' evidence.¹

For example, the element of Oceanic language which I call Austronesian had originally noun-suffixes, still common in Melanesia, but much less so in Polynesia, and there greatly decayed. Often a Melanesian language has both forms, that with and that without the suffix. I shall illustrate from San Cristoval: *asu* and *asuha*, smoke; *mae* and *maeha*, sickness or death; *mata* and *mataha*, mouth of river; *ahu* and *ahura*, a mound; *ahé* and *ahera*, a current. Now where there are two forms, one of which takes the suffixed pronoun, and the other the suffixed possessive noun, it is the archaic form which takes the pronoun: *asu ana*, but *asuha na*; *mae ana*, but *maeha na*, etc., so that the pronouns *gu*, *mu*, *na* are associated with the older forms, and the possessive nouns with the decayed forms; whereas Dr. Rivers takes *gu*, *mu*, *na* to be the later.

I do not doubt that there is more than one Austronesian stratum, but it is the Atawa stratum, which is not only older but more widespread than the Abarihu stratum. What has led to the decay of the forms? May we not reasonably assign it to the Kava people, who have been shown to have exerted such a great influence on the customs and religion? If so, the influence of the Kava people has been greatest in Polynesia, or at any rate it has been greater there than in the dual regions of Melanesia; and it is in the dual regions of Melanesia that we shall find the purest form of the Proto-Polynesian language which is the basis of the Polynesian speech. The influence of the Kava people has everywhere been a breaking-down and disintegrating influence, but hardly an influence for uniformity; rather it has led to a greater dissimilarity, on account of its varying intensity. But for the Kava people Bauro and Maori would be much more alike than they are. Maori is a broken-down form of Bauro, its old Atawa speech decayed and a new element added by these foreign kava-drinking people, who spoke at least a later form of Austronesian speech.

¹ "Certain Suffixes in Oceanic Languages," *Royal Society of Victoria*, xxvii (New Series), Pt II, 1914.

I use this concrete example only to make the position clear, for of course there is no direct connection between Bauro and Maori.

This, it will be said, takes no account of the Papuan element. This, however, is, I believe, very small indeed in most Melanesian island languages;¹ everything is usually set down as Papuan which is not superficially and obviously Polynesian. There is a Papuan element: in a few languages a large one, in the majority a very small one. Casual comparisons will only cloud our vision and lead us astray; and until, by patient analysis, following sound philological rules, the common Austro-nesian element is discovered, it will be premature to estimate exactly the Papuan element in such languages as Bauro. A comparison of small vocabularies may easily be misleading.

Generally speaking, the view taken in this paper is that there is a common underlying Atawa element in Melanesia and Polynesia, probably imposed on a foreign people in Melanesia, usually without their influencing it largely; later much simplified, chiefly in Polynesia, by an immigrant people. What is most widespread is Atawa; what is less but still fairly widespread belongs to Abarihu; what is local is either earlier or later than either Atawa or Abarihu; provided it is really local, and not a local use of a widespread word such as *lama*, sea, in Mota.

I hope I have not criticised unfairly the language argument of Dr. Rivers' book. There is much in it of great interest, much with which one can agree, but the whole seems to be based on unsound methods of comparison, attaching undue importance to a superficial similarity or dissimilarity of forms. We owe him a great debt for bringing to our attention the impossibility of keeping anthropology and philology in water-tight compartments, the necessity for allowing the existence of strata in the languages, some of which strata may not be Austronesian, and the need for analysing the languages into these strata. It is this analysis of the Oceanic languages which is now needed.

I hope Dr. Rivers may reconsider his argument for a Kava people *lingua franca*, at least in the form in which he stated it, and consider whether, putting aside languages like those of Vanikolo, Santa Cruz, and Savo, and taking into account the causes for variety I have named, there is really a greater variety of terms for such relatives as mother and mother's brother than for father and similar relationships; whether the anomalous marriages whose existence he so brilliantly demonstrated are not themselves the reason for using descriptive terms, and terms properly used for other relatives and so causing apparent variety; whether, if he will allow rather more to the influence of later immigrations, not only of the Betel people, but also of successive waves of the Kava people, the variety, such as it is, cannot be thus explained; and whether it is not this use of terms owing to anomalous marriages, rather than

¹ It is difficult to see how the forms could be more archaic in Melanesia if Papuan influence had been great

a new linguistic strain, which causes the variety in the use of possessive forms used with the relationship terms; whether, in short, the common fund of words, in relationship terms as in other words, is not that of the Proto-Polynesians rather than that of the Kava people. That is the view urged here. While allowing great influence to the Kava people wherever they became predominant, especially in Polynesia, an influence that simplified the languages, I suppose the languages of Polynesia and Melanesia to have been more alike before the Kava people came than they were after their settlement.

No attempt has been made to fix any dates for the coming of the Atawa or Abarihu. The Polynesian Society of New Zealand has attempted to assign dates for the immigration of the Polynesians, but may they not be really following the traditions of the Abarihu (the chiefs) and tracing, perhaps correctly, their coming and voyaging hither and thither, while neglecting the Atawa (the common people) section of the Polynesian race? It may be possible to discover the comparatively recent date of the coming to Polynesia *via* Melanesia of the Abarihu, without forming any conclusion as to the very much more ancient arrival of the Atawa.

It has not been meant in this paper seriously to suggest memorial adoption as a sufficient explanation of the anomalous marriages, even in San Cristoval, far less in Melanesia. There is actual evidence in San Cristoval of old men handing on their wives as the second wives of younger men, and memorial adoption is perhaps itself an indirect result of the anomalous marriages; but when once established it must help to bring the generations together in appearance; and I wished to emphasise its effect on relationship terms, perhaps more in the past than in the present, and to suggest that it has really been a contributory cause of the state of things we now find in San Cristoval.

The anomalous marriages themselves are seen to be very common at the present time, just as Dr. Rivers had predicted, and whether in the dual or totem region. I think my enquiries have been wide enough to allow me to conclude that half, or even more than half, of the marriages of the people of Arosi and Bauro are made between men and women separated from one another by one or sometimes two generations; and yet so far back do the roots go of such a state of society that the ordinary observer sees men marrying women of about their own age and does not suspect anything unusual in the marriages. The real discoverer of these San Cristoval anomalous marriages is Dr. Rivers.

Finally, there is one point on which I should like to add a note. Natives when considering in what relation they stand, reckon from person to person: so-and-so is *hai*-so-and-so to someone else, that someone else *hai*-so-and-so to another person, and so on till the connection is made.

Now it is evident that with all these different marriages taking place, sometimes one and sometimes another, a man's relations by marriage must be called by very

varying terms; and such is the case, the unexpected term is almost always used for a relative by marriage.

But it is also possible that closer relatives may be named by varying terms according to the way in which a man reckons, either through his father or mother. For example, a woman may make in Arosi any one of five marriages: she may marry her "brother," father's "brother," mother's cross-cousin, husband's sister's son, or brother's daughter's son. Now when her son has to name his father's sister he may say: "What is my mother to her?" and might in this way call her *ina*, *wae*, *haho* or *mau*, the first two most frequently. Since we find the father's sister sometimes called *wae*, perhaps this way of reckoning is used. So the father's brother might be *ama*, *uwai*, *doora*, or *mau*, and there is one case in the pedigrees of a father's brother being called *uwai*, but only one. In the same way a man may marry in a variety of ways and then, if his son reckons from the father, the mother's sister might be called *mau* (niece) or she might be *asi* or *haho*, and so the children *mau*. I have never found the mother's brother called anything but *mau*, and in almost every case the father's brother is unhesitatingly called *ama*, but sometimes people hesitate as to how to name the father's sister and mother's sister, especially the former, and possibly it may be for the reason that, with such marriages taking place, these relatives will stand in different relations to a person as viewed from his father's or his mother's side.

The custom of marrying the *mau*, i.e., the daughter of the cross-cousin, is probably comparatively recent, for the custom of avoidance seems to point back to a cross-cousin marriage, and as a matter of fact a native said to me: "We marry the *mau* because we can no longer marry the *haho*." Probably the custom of marrying the brother's daughter is also comparatively recent. On the other hand, the custom of marrying the wife or wife's sister of the mother's brother, who is in a classificatory sense the father's sister, is evidently dying out, and it is only in the bush that the children of the mother's brother are regularly called *gare*. Still more may this be said of marriage with the *wae*: all the cases I have found of this occur in the interior, and I have been told repeatedly that "this custom was formerly common, but is no longer followed." The general tendency, therefore, now is for a man to marry a woman a generation below him (unless he marries, as at least half do, in his own generation); whereas the evidence points to a time when a man married a generation above him, and to a still earlier time when he married a woman two generations above his own. The tendency in Bauro seems to be in the same direction.

G.—NOTE ON BURIAL IN SAN CRISTOVAL.

Burial customs have been so often referred to in this paper that a short notice of them, to be followed later by fuller descriptions, is given here.

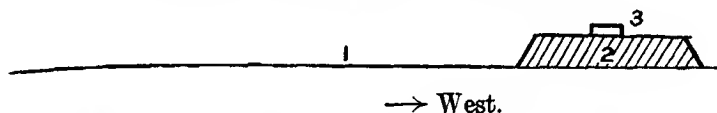
There are two chief methods, burial in the ground and preservation of the body. Among the dual people, especially in the bush, burial in the ground is usual, the body in a sitting position and hands and legs tied, knees drawn up.

Where preservation is practised (especially in Arosi) there are several varieties: the body may be wrapped up in the house, or exposed on a rock by the shore, or on a tree platform, or on a burial mound called *heo*, in an oblong food-bowl called *hohoto*, or in a canoe called *aháaha*. In all cases the bones are afterwards collected carefully.

Between these two varieties are what may be considered modifications: burial sitting with head only exposed; exposure sitting with knees drawn up; burial extended till the body decomposes, when the bones are collected.

Besides these there are cremation and burial in the sea. In the latter case two bags of sand are tied either to the feet or round the waist, according to the wish of the person that his body should lie flat or stand upright; and I have met with one case of upright burial in the ground. People usually say how they wish to be buried. Altogether there are more than twenty slightly different methods of disposing of the dead.

DIAGRAM OF BURIAL MOUND AT UBUNA.



1. *Hera* (open space). 2. *Heo*, burial mound of earth. 3. *Hau suru*, large stones arranged to form a sort of box, in which the bones were collected.

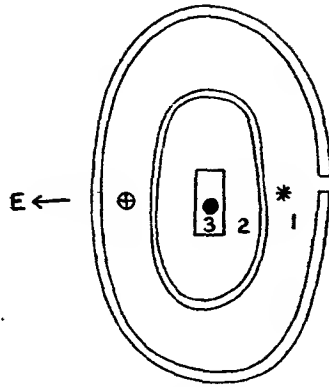
In the case of the Araha clan a canoe was always used if possible; if not, a bowl. It was in this case that a sort of rough embalming, *kara-oa*, was practised. (It was only members of this clan who could tattoo the sun ☼ on their bodies, or on the gable ends of their houses, and wear the disk called the "face of the sun"; and to them specially belonged the sign of the frigate-bird.) Araha men were buried in other ways, but not other men in this way.

H.—NOTE ON A GUADALCANAR *Poli*.¹

As an illustration of the way in which customs differ from island to island, with similar underlying ideas, I give a short description of the sacred place of the village of Malagete in the island next to San Cristoval, Guadalcanar. The sacrifice there,

¹ The word *poli* means a snake in other parts of Guadalcanar and in Florida, but is not so used in Malagete or in any part near Malagete, where the word is only applied to these sacred places. But the meaning of the word in other parts of Guadalcanar and in Florida, combined with the use of the sacred grove and sacred stone, seem to point clearly to serpent worship.

which takes place twice a year, was described to me by Koko, a native of the place, who has not lived there for some years, but remembers well attending the rites as a small boy; and the diagram below was drawn by him and explained to me as follows :—



Outside the oval are trees, surrounding the *poli*, as the whole sacred enclosure is called. A *poli* is made either in the centre of a village or on the sea side, but never on the side nearest the bush. No women must ever approach it, but young boys may do so, and Koko was several times present at the ceremonies, which take place when the gardens are planted and when they are dug. There is a broad outer stone wall with a single entrance. On this wall the men and boys sit during the sacrifices, but they cannot go into the enclosure (1) which is paved with stones. Beyond this there is another inner wall, but quite low, and beyond another space paved with stones (2) on which the sacrifices are placed by the priest, called *kodo-bo*,¹ who stands where the star is on the plan and faces east, the ceremony itself taking place at noon. Within the second enclosure is yet another stone wall, but oblong instead of oval, and the space within this (3) is not paved with stones, but planted with shrubs called *goragora* (probably crotons). In the centre of all is the object of worship, associated with a *tindao*. This is a smooth, round, and highly polished black stone, which Koko compared to a cannon ball. The *kodo-bo* himself cannot cross the second stone wall, and Koko supposes no one ever actually approaches the stone itself, though all can see it. Opposite, to the east, is a sacred tree: a tree called *Bilibili*, a large dark-wood tree, which has fruit growing in clusters of three each.

The *kodo-bo* takes with him fire, wood, and the sacrifice, which is either pig or bonito (called *atu*). He places the fire on the stone pavement, and the wood on it, and on top of all the pig or bonito; but he must not blow the fire or help it artificially to burn. He then stands facing east and recites a prayer; if while he does so the fire kindles and blazes up, the *tindao* has received the sacrifice with favour; but if otherwise, it is a sign that the *tindao* is displeased. The trees surrounding the *poli* make the wall on which the men and boys sit cool and shady.

¹ *bo* means pig

Koko adds that *poli* are very numerous in that part of Guadalcanar, the weather side of the island. He was doubtful if other *poli* have a similar orientation. Koko, who belongs to the *Lakuili* totem clan, thinks that the ceremony has nothing to do with the clans: everyone goes to it.

The form of the *poli*, an oval enclosure, may help us to understand the meaning of the Banks Islands word *ooloo*, whose meaning has been obscured by Dr. Codrington and Dr. Rivers.

In Efate *koro* means (1) a fence or wall; (2) a fish fence; (3) a ring or halo round the moon, and (4) rites of incantation and divination, and Dr. Macdonald shows that the last meaning is derived from the meaning of enclosing; the sick person is enclosed and evil influences shut out by the priest, who is said to *gorokoro*; and the word is now used for prayer.¹

The Mota word *ooloo* I take to be the Mota form of *gorokoro*, and its meaning to be enclosing, protecting, defending; and this is confirmed by other words in Mota, such as *olo*, to overlap, turn up at the end, and still more by *goro*,² to embrace, and *goro* a preposition "of motion towards, around, against,"³ but there is no meaning of motion in the word, and if the meaning of "a fence" is kept in view, the use of this difficult preposition will be understood. Dr. Codrington translates *ooloo* as "to make an offering" to a man who has a stone with which a spirit is connected; but he is only translating a Mota sentence which can equally well be translated: "to enclose or protect by means of a man, who knows a stone, with money and kava, on a stone," since the Mota *mun* means "by" as well as "to" or "for." When Dr. Codrington says "*ooloo* to the man," he is only translating the Mota *mun* in his own way. So the priest is said to *ooloo avune vat ape A*, i.e., "to enclose, on the stone, on A's account," while A himself may *ooloo ape vat* for various benefits; the money, or other offering put in the enclosure (as I conjecture) is also called *ooloo*, and the man who does so is called an *ooloo* (Guadalcanar *kodo*), and the stone is called *tano-ooloo*, which is often, Dr. Codrington implies, a hollow place (*kokoro* in Wango means a small hollow in the hills).

I suggest that a stone circle like the Guadalcanar *poli* once surrounded the sacred stone connected with the *vui* in Mota, and that the stone represents the moon. In San Cristoval, on the south coast, a halo round the moon is called *koro* (as it is in Fiji, in the form *virikoro*), and is a favourable omen; while in every village the new moon is greeted with shouting. In Maori *pukoro* is the halo round the moon, and *Koro* in Maori mythology was the name of a deity who was the son of the Moon, while the Mangaia version makes *Koro* and *Ature* the moon's children; *Koro* also planted the first pandanus. *Koro* may be the Tahitian god *Oro*; especially if

¹ *Asiatic Origin of the Oceanic Languages*, pp. 80, 101.

² The root is *ro*; cf. Wango, *roro aku*, a belt; Mota *malo*, a girdle of leaves and flowers; Malagasy *aro*, a fence, dyke, to guard, protect, preserve.

³ *Mota Dictionary*, pp. 28, 109, 110.

this worship of the moon in a stone circle is part of the dual culture.¹ Polynesian mythology connects Tinirau, a son of Tangaroa (a god of the dual people according to Dr. Rivers) and the god of Fishes, with Hina and Kioro; and in the Guadalcanar rites bonito fish, *atu*, are sacrificed. Again, a cult of trees is suggested in the New Hebrides, where a coco-nut is offered on these sacred stones connected with *vui*, for sun, rain, and good crops. The only sacred stone, connected with serpent *figona*, which I know of in San Cristoval, is a large black circular stone with a white band, but San Cristoval stories always connect the serpent *figona* with sacred stones. In Efate the moon is called *atalangi*, i.e., the spirit or soul of the sky, and *koro-atalangi* is the halo. Connection with a serpent is suggested by the Guadalcanar name; serpents are worshipped in San Cristoval in sacred groves and are connected with sacred stones; and in the Banks Islands, Qat, one of the *vui* spirits, is the grandson of Iroul, evidently a serpent spirit. In San Cristoval, the first drinking coco-nut is sacred to the serpent spirit. In such words as the Samoan *oloolo*, a haunted place, we may perhaps find traces of this old dual culture, with its stone circles, moon, and perhaps star worship, sacred trees and serpent spirits. The *atu*, bonito fish, hold a great place in San Cristoval religion, where, as in Ulawa, they are called *wai-au* (*wai* being a common noun prefix); probably they are the *atu rere* (*rere*, to leap) of New Zealand (cf. the Mangaian *Ature* above): for bonito in the Banks Islands are called *rowo*, from *rowo*, to leap (but they may be the Maori *waiehu* (the Maori dictionaries merely translate "the name of a fish")). The San Cristoval word, as usual, drops the *t*. The fact that the sacrifice is offered at noon seems to be against my interpretation of the ceremony.

I should add to this short account of the *poli*, that Koko does not think anyone is buried there, at any rate in the present day; the dead are buried in the sea, but in a different way from that followed in San Cristoval, as they are tied in a sitting position, with knees drawn up and hands resting under the chin on each side, and tied in that position. The corpse is then put into a canoe with two men and they paddle out to sea, another canoe with two men following. The dead man is committed to the sea in the sitting position and also the canoe in which he was is broken up, the four men returning in the remaining canoe; or else his canoe is brought to the shore and there broken up. This account applies only to Malagete itself.

¹ Ellis, in his well-known book, *Polynesian Researches*, says of Oro, that he was "the medium of connexion between celestial and terrestrial beings. The shadow of a breadfruit leaf, shaken by the power of the arm of Taaroa (his father) passed over Hina (the moon) and she became the mother of Oro."—*Polynesian Researches*, 1829, vol. ii, 194.

In the Marquesas a sky flecked with white clouds is called the *Paepae-a-Hina*, "the pavement of Hina" (*mahina* in the Marquesas means moonlight); this I suggest is the heavenly counterpart of the stone pavement of the Guadalcanar *poli*, just as the circular space enclosed by the halo round the moon is also the heavenly representation of the earthly *poli*.—Tregear, *Maori Comparative Dictionary*, p. 70

THE FINNIC QUESTION AND SOME BALTIC PROBLEMS.

By HAROLD PEAKE.

As is well known, the vast majority of the peoples of Europe, of whatever race, speak languages belonging to the group known as Aryan or Indo-European ; the exceptions are not numerous. Among these are the inhabitants of Finland, the Finns or *Suomi*, and dialects allied to the Finnic are spoken also south of the Gulf of Finland by Tchouds, Esths and Jmouds, and also by many tribes, such as the Mordvins, Bashkirs and Cheremiss, who live near the junction of the Volga and the Kama and in the region of the Middle Volga lying between Nijni Novgorod, Samara and Perm ;¹ languages more distantly allied are also spoken by the Lapps and Samoyeds in the north. These languages have Asiatic affinities, being closely allied to some of the tongues spoken in Western Siberia, and it is claimed by some writers that they are more distantly connected with the speech of peoples living still farther to the east, as far indeed as Korea and perhaps Japan.²

It is natural, therefore, that students of ethnology have taken special interest in the racial affinities of a people who appear to have intruded into Europe from Northern Asia, and as the problem is not altogether apart from that of the early Baltic people, who have supplied some of the most vigorous elements to our own population, its solution cannot be a matter of indifference to British ethnologists.

Until recent years it was generally supposed that the Finns, like the Lapps and Samoyeds, were an Asiatic people with Mongol affinities, or at least resembling the Mongols in certain important features, and they have been described as a Mongoloid race. This term is admittedly vague, for it has been applied to all those people in which Mongol features are present in a diluted form, whether such dilution is believed to have been due to hybridization with other races, or whether to other causes. Such, however, was the view held generally about five-and-twenty years ago and advanced by Beddoe in his Rhind lectures in 1891 ;³ and it is still held as a matter of course by many anthropologists, including Dr. Hrdlička, who has recently restated this case.⁴

¹ Ripley, W. Z., *The Races of Europe*, London, 1900, pp. 341, 358, 361.

² Castrén, M. A., *Ethnolog. Vorlagn. ü. d. altaischen Völker, nebst samojed. Märchen u. tatar Heldensagen*, St. Petersburg, 1857.

³ Beddoe, J., *The Anthropological History of Europe*, Paisley, 1893.

⁴ Hrdlička, Aleš, "The Races of Russia," *Smithsonian Miscellaneous Collections*, LXIX, xi, pp. 1, 17.

During the last quarter of a century a different view has been advanced, and very generally accepted by students in the Baltic region and in Germany. Ripley, following G. Retzius,¹ Bonsdorff, Elisyeef² and Mainof,³ thus describes these people:—"These latter Finns are among the tallest of men, with fair skin, flaxen or tow-coloured hair, and blue eyes. [The map] shows us among the Esths on the Baltic coast, through the Cheremiss on the Volga and clear beyond the Ural mountains among Ostiaks and Voguls in Siberia, a long-headedness not a whit less pronounced than throughout Teutonic Germany."⁴ It is clear that Ripley believes the Finns to be of the Nordic race, or closely allied to them. The same view, or one very nearly approaching it, is held by Giuffrida-Ruggeri,⁵ on the authority of Zaborowski, Tschepouskoosky and Drontschilow. Ruggeri believes that Proto-Nordics, Proto-Finns and Proto-Mediterraneans are branches of a common stock, which originated on the confines of Europe and Asia.

But a reference to Ripley's map (p. 362) shows us that the inhabitants of Finland are by no means long-headed. On a narrow coastal strip we find indices of 78 and under; farther inland, to a depth of about 90 miles, the average index is 79; in the next 60 miles it is 80; beyond that, throughout the greater part of the country, it averages 82; and in the extreme north it is 83 and 84. The Tchuds and Esths, to the south of the Gulf of Finland, have an average index of 79, and the Livs of 80.

A map of the head-form of the present inhabitants of Finland, given in the new *Atlas de Finland*, is even more striking. It shows that in the north the broad heads—i.e., those with an index of 80 and upwards—are from 90 to 100 per cent. of the population, while throughout the greater part of the rest of the country the proportion does not sink below 50 per cent. Two small exceptions alone occur; there is a coastal strip in the south-west, and another rather farther north, where the proportion of broad heads sinks to lower figures, varying in different communes from 49 to 30 per cent.⁶ These two areas are noted in other maps as possessing a considerable number of Swedish-speaking people and Swedish schools, showing that they have received an appreciable quantity of immigrants from Scandinavia during recent centuries.

Ripley gives no figures for stature, as none had been published when he wrote, but the new atlas gives a map of these too, and it is scarcely less striking than that of the head-form. In the north and east the stature ranges from 1636 mm. to 1650 mm. (5 feet 4 inches to 5 feet 5 inches), while in the south-west, including

¹ Retzius, M. G., *Finska Kranier*, Stockholm, 1878.

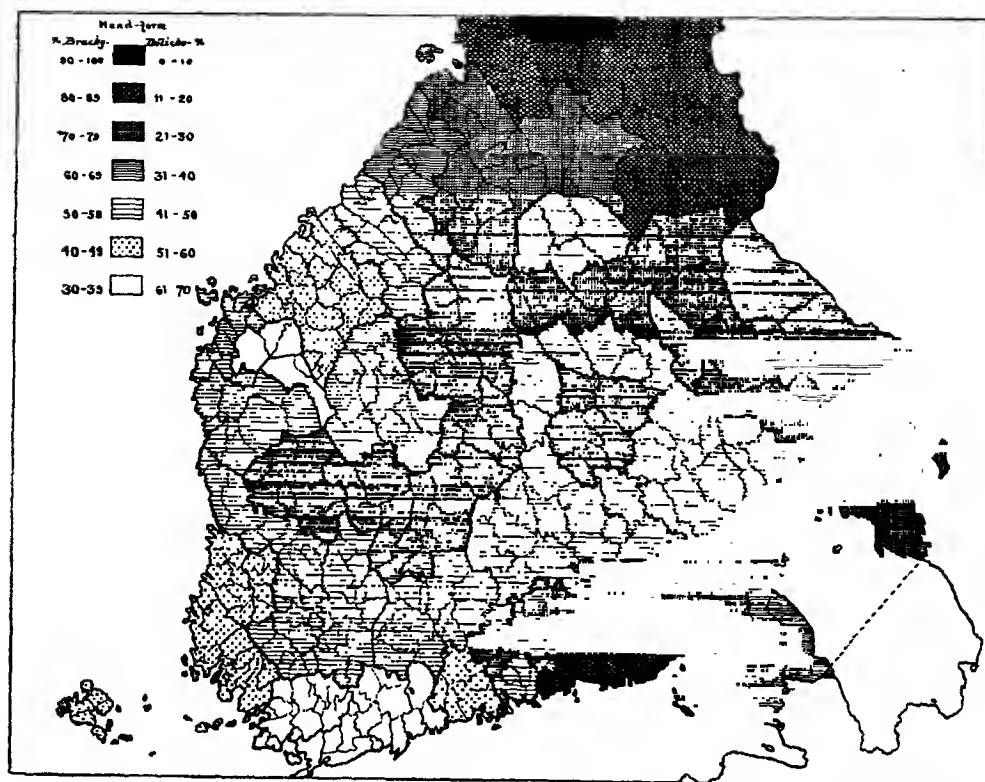
² Elisyeef, A. B., *On the Anthropology of the Finns*, 1887. *In Russian*.

³ Mainof, V. N., *Anthropological Results from the Races of the Mordva*, 1879; *On the Anthropology of the Mordva*, 1891. *In Russian*.

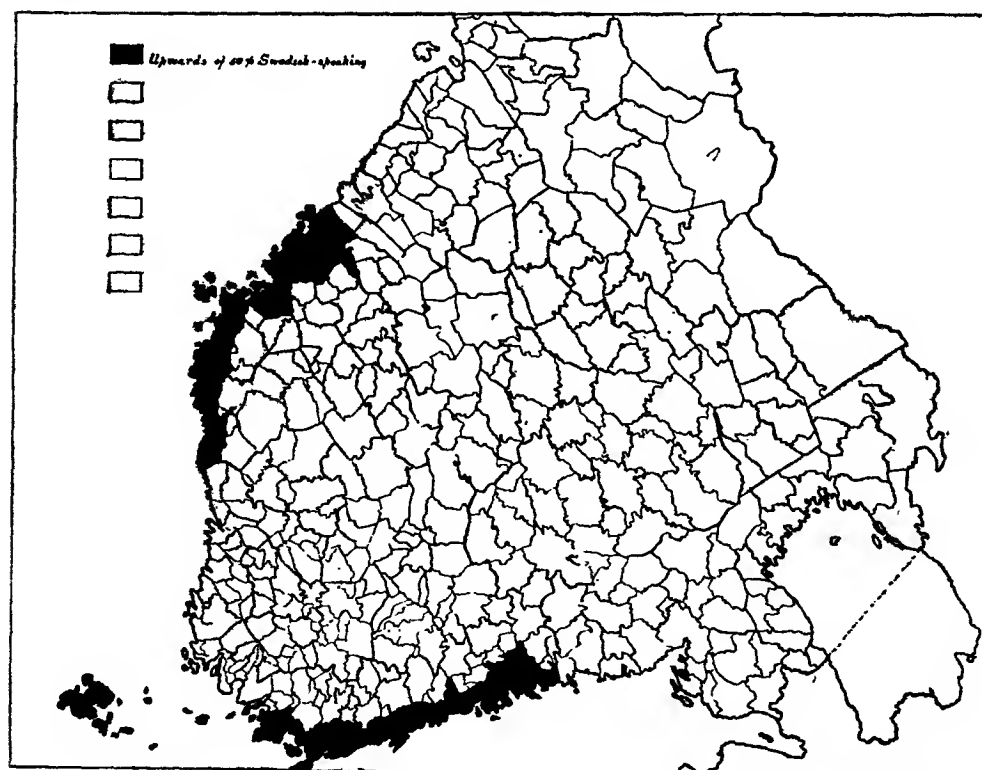
⁴ Ripley, W. Z., *op. cit.*, pp. 359-360.

⁵ Giuffrida-Ruggeri, V., "Antropologia e archeologia in taluni riguardi della preistoria europea," in *Archivio per l'antropologia e la etnologia*, XLVI, 1916, pp. 32, 33.

⁶ *Atlas de Finland*, 1910, Texte, ii, p. 54.



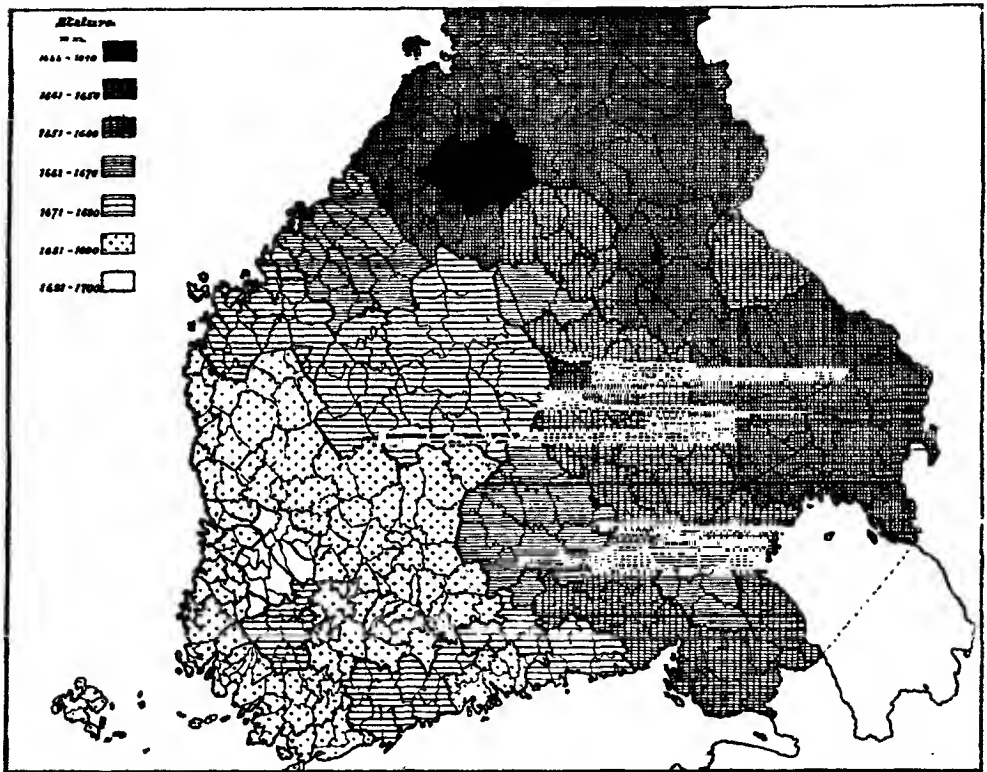
1.—MAP OF SOUTH FINLAND, SHOWING DISTRIBUTION OF HEAD-FORM. (COMPILED FROM THE *Atlas de Finland*, 1910.)



2.—MAP OF SOUTH FINLAND, SHOWING DISTRIBUTION OF LANGUAGES. (COMPILED FROM THE *Atlas de Finland*, 1910.)

the two narrow-headed Swedish areas and the region between them, the average stature varies from 1661 mm. to 1700 mm. (5 feet 6 inches to 5 feet 7 inches).

The natural conclusion from these maps is that while the bulk of the population of Finland is short and broad-headed, tall long-headed immigrants, speaking the Swedish language, have partially ousted the Finnish population from two areas on the coast, and have slightly affected the head-form and considerably affected the stature throughout the whole of the south-western corner.



3.—MAP OF SOUTH FINLAND, SHOWING DISTRIBUTION OF STATURE. (COMPILED FROM THE *Atlas de Finland*, 1910.)

In Russia, while great stature is found among the Tchuds and Livs, the average declines as we go eastwards, and very rapidly after we pass Novgorod and enter the upper basin of the Volga.

Ripley admits that besides his fair type there is a broad-headed dark type, which reaches its greatest intensity in Lapland, but is found also among the Samoyeds, Kareles, Mordvins and other peoples speaking Finnish dialects. "These people," he says, "correspond closely to what we popularly regard as Mongolian. They are all dark or black haired with swarthy skins; they are peculiarly beardless. With the round face, bullet head, high cheek-bones, squint eyes and lank hair, they

constitute an unmistakable type." "Many of these people," he adds, "speak Finnic languages, so that in a sense it is still proper to class them as Finns."¹

It is clear, then, that in the area occupied by Finnish-speaking people we have two stocks; one tall, blonde and long-headed, the other of variable stature, dark, broad-headed and Mongoloid in appearance. To which, then, should we attribute the term Finnic?

Now it is generally believed that the term Finn is a name given by outsiders, probably by the Nordic people of Scandinavia, to a people whom they recognized as different from themselves, and who inhabited the Fen region, which we now know as Finland. Whether this be true or not, one thing is certain, which is that the people of Finland have always called themselves *Suomi*.

As we have seen, these Finnic peoples have a common tongue; they have also a common body of tradition and folk-lore, and possess in common that series of ancient national songs published under the name of the *Kalevala*;² this collection, while it makes no claim to inspiration, is in reality the poetical expression of the Finnic religion.

There is, then, something very distinctive about the Finns; they are sharply separated both by language and tradition from most other Europeans, and it is of some importance to determine to which of the two races constituting the present population of Finland we must attribute this tongue and this tradition.

Now the tall, blonde, long-headed Finns seem, as a rule, to be indistinguishable from a similar type in Courland, from the Letts, Lithuanians, Swedes and the tall, fair type of Englishman. All those west of Finland and south of the Livs speak Aryan languages, nearly all of them Teutonic dialects.

On the other hand we find the Finnic tongue spoken in the east, from Nijni Novgorod to the Urals and from Samara nearly to the Arctic Ocean. The Finnic dialects belong to a group of languages known as Ugrian, spoken over large tracts of Western Siberia, and the Ugrian languages are thought by some to be part of a greater group, formerly called Turanian, but now termed Ural-Altaic, which stretch in an almost complete belt from Lapland to Korea—some would say to Japan.³

If, then, we have to choose between the Nordic or Mongoloid elements in Finland, we cannot, I think, refuse to admit that the language, at any rate, seems to belong to the Mongoloid section. The language and tradition seem bound up together, and everything points to the conclusion that the essential Finn is Mongoloid.

¹ Ripley, W. Z., *op. cit.*, p. 361.

² *Kalevala*, nach d. 2. Ausg. ins Deutsche übertragen v. A. Schiefner, Helsingfors, 1852. Translations have also appeared in French (1879), Italian (1881) and English (1889 and 1907).

³ The view that the Ugrian languages are connected with the more eastern groups, which was advocated by Castrén and for a time generally accepted, is at the present moment out of favour among comparative philologists.

Ripley seems to have felt some uneasiness when considering the tall, blonde, long-heads as Finns, for he admits that all Finland is relatively broad-headed. He is prepared to meet the difficulty squarely. He believes that Finland was the refuge of numberless Mongoloid elements, driven thither by advancing Slavs, and there compelled to adopt the Finnic tongue by the predominant Nordic population,¹ and this in spite of the fact that the Mongoloids physically resemble the Lapps and the Finnic language is also related to their tongue.

It is always unwise to use an ethnic term as a designation for a race, and a linguistic term usually serves no better. There is no country whose population is racially uniform, no language which is spoken by one race alone, or by all members of a race. Therefore we have given up talking of the English race, and have left the term British race to journalists, who love to talk also of Celtic, Teutonic and Slav races, and are devoted to that meaningless term the Latin races.

There is, then, strictly speaking, no Finnic race; but we may safely, I think, argue that all that is distinctive in the Finnic people, whether in language, tradition or folk-lore, comes mainly, if not entirely, from that element, which appears also to be the most numerous among those who call themselves, or are called, Finns, namely the dark, broad-headed strain with Mongoloid features.

Ripley appears to think that the Nordic section of the Finnic people has been settled longest in the country, and so is entitled to the name. Even were this the case it would scarcely provide sufficient justification for neglecting the factors of language and tradition. But it is doubtful whether he can substantiate his claim for the priority of the Nordic race in Finland. It may be well, therefore, to examine this point more closely, that we may see whether he is justified in this belief.

Dr. Knut Stjerna has described a culture, which he calls East Scandinavian culture, and which extended round a great part of the Baltic shore before the introduction of megalithic monuments, that is to say, at the beginning of the second half of the Neolithic Age. This culture, according to Stjerna, is represented by tools of bone, horn, slate and flint, together with rough incised pottery. It is accompanied by burials in short cists, with three stones on either side, in which the bodies lay extended, on their backs, with their heads to the west.²

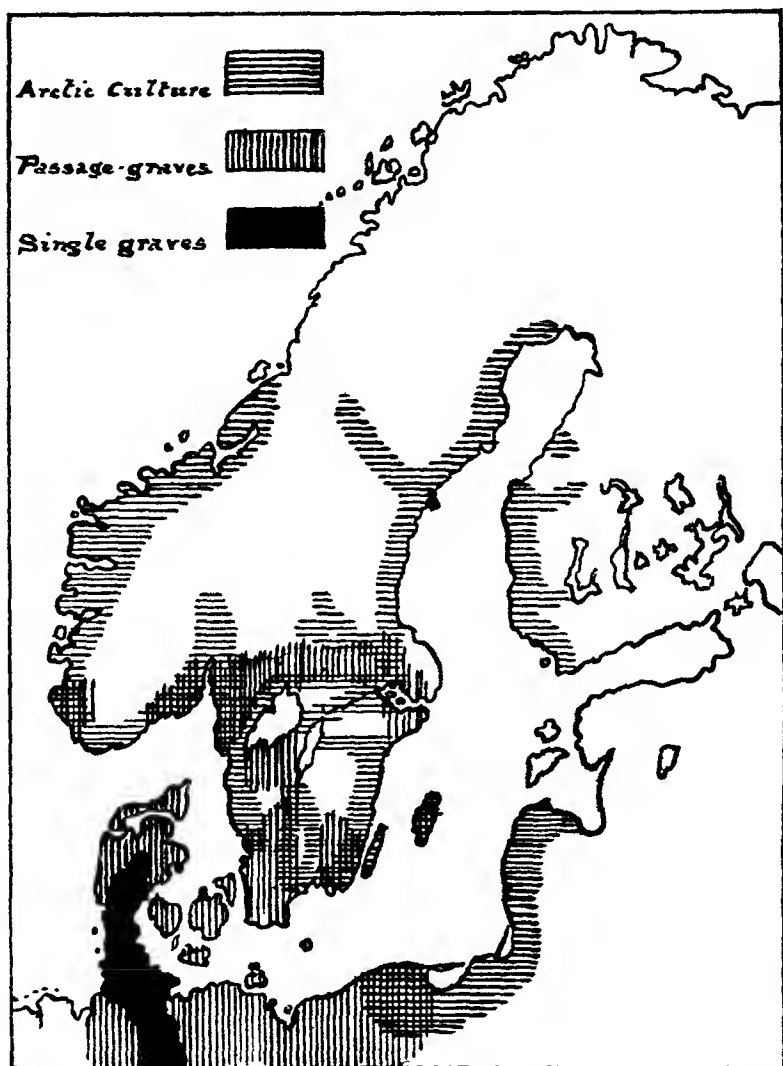
This seems to be the culture described some years ago by Dr. Oscar Montelius as antiquities of stone, usually of slate, found in the north part of Sweden. This culture he called Arctic, and it is, he says, "chiefly met with in Lapland and Norrland, and bears a close resemblance to those found in Finland and other northern countries inhabited by Lapps, Finns or other people closely related to them." He adds that the comparatively large number of such stone implements met with in the districts on the coast from Westerbotten to Gestrückland, and also in Dalarna, districts not

¹ Ripley, W. Z., *op. cit.*, pp. 363-364.

² Knut Stjerna, "Les groupes de civilisation en Scandinavie à l'époque des sépultures à galerie," in *L'anthropologie*, xxi, pp. 2, 4, 10.

now inhabited by Lapps, shows that formerly they dwelt in far more southerly tracts of Sweden than at the present day.¹

Mr. Reginald Smith, in his presidential address to the Prehistoric Society of East Anglia in March, 1918, says that this culture, characterized by the use of slate



4.—MAP OF THE BALTIC REGION, SHOWING THE DISTRIBUTION OF THE ARCTIC, PASSAGE-GRAVE, AND SINGLE-GRAVE (BEAKER) CULTURES.
• (AFTER KNUT STJERNA.)

for implements, goes by the name of Arctic or Arctic-Baltic culture, being roughly contemporary with the dolmens and passage-graves of Southern Scandinavia. It spread, he says, "from Finland right across the peninsula, from the Gulf of Bothnia

¹ Montelius, O., *The Civilisation of Sweden in Heathen Times*, 1888, pp. 38, 39.

to Trondhjem, and the settlements were chiefly in the valleys and woodlands." "The people," he says, "were in the fishing and hunting stage of civilization, and seem to have been the first to reach the far north." Their period has been estimated about 4000–2500 B.C.¹ The fullest account of this culture appears in the work of A. W. Brögger, entitled *Den arktiske Stenalder i Norge*.

Dr. Stjerna mentions that several skeletons associated with this culture were dug up at Gullrum and elsewhere in the Isle of Gotland, and at Aloppe in Uppland,² and a description of these might perhaps settle beyond doubt the racial affinities of these Arctic people. For a time I searched in vain for descriptions of these skeletons, but Dr. Oscar Montelius, to whom I applied for information, has kindly informed me that the remains were too badly crushed to be capable of measurement.

I find, however, that Fürst gives some of the measurements of the skull from Gullrum. It appears to be dolichocephalic, though it is impossible to give the length-breadth index with precision. He also gives measurements of two skulls from Hemmor, which, according to Brögger, were associated with this culture; these are both long-headed, with length-breadth indices of 76 and 75.³

On this evidence, then, we might assume that the people responsible for the Arctic culture were dolichocephalic, but it is dangerous to base our conclusions on three very broken skulls, especially as Fürst says of that from Gullrum that certain incisions upon the bones, which are broken into small fragments, more than suggest the possibility of cannibalism. With regard to those from Hemmor he states that what he has said about the bones from Gullrum, and the deduction he has drawn as to the possibility of cannibalism, applies also to the bones from Hemmor.⁴

It is possible, therefore, that these three skulls do not belong to the authors of the Arctic culture, but to shipwrecked mariners who fell victims to their ghoulis appetites; and as these settlements date from the time of the passage-graves, which, as we shall see, were associated with a dolichocephalic people, this explanation is more than a possibility.

Now at Rinnekaln in Livonia, on the south bank of the Salis, where it issues in a stream from Lake Burtneek, two early settlements were found, one above the other; the descriptions of the articles found in the lower stratum, which consisted mainly of harpoons, scrapers, arrow-heads, etc., all of bone, lead us to identify this settlement as one of Arctic culture, a conclusion also arrived at by Almgren.⁵ Among the skulls found in this earlier settlement two males had a length-breadth index of 84·5, two

¹ Smith, Reginald A., "Our Neighbours in the Neolithic Period," *Proceedings of the Pre-historic Society of East Anglia*, ii, p. 495.

² Stjerna, K., *op. cit.*

³ Fürst, Carl M., "Zur Kraniologie der schwedischen Steinzeit," Upsala and Stockholm, 1912, pp. 40–43.

⁴ *Ibid.*, pp. 22–24.

⁵ Almgren, O., *Några svensk-finska stenåldersproblem* (*Antikvarisk Tidskrift för Sverige*, Vol. XII, Pt. i), Stockholm, 1914, p. 75.

females and a child that of 81·9, while one female had an index of 75·2. On the other hand, in the upper settlement, which was of course of later date, the majority were long-headed, though five out of twenty-nine were sub-brachycephalic. "Comparing the short-headed crania of the upper and lower series, Professor Virchow finds they closely resemble each other; they do not differ ethnologically, and there is nothing to prevent their being classed together. With regard to nationality he believes we need hardly hesitate to consider the short heads as the Finnish and the long heads as the Lettish element."¹

On the other hand four skeletons are described by Fürst,² which come from a settlement at Wisby in the Isle of Gotland,³ and which are thought by Almgren⁴ to be associated with this Arctic culture, though the latter writer states that they give no decision on the question of race, since they are all of different types. In the first place it is by no means clear that these skeletons were found in association with typical Arctic culture, though the presence in the graves of perforated seals' teeth lends support to this view. In any case they date from a time when the people of the Arctic culture had met and come in contact with the Nordic people who are found associated with the passage-graves, for Fürst states in unmistakable terms "the artefacts found in this settlement belong to the passage-grave period."⁵

The skulls from Wisby are, as Almgren has stated, of diverse types. One of them, No. 11, is remarkably brachycephalic, having a length-breadth index of 85·1, and resembling in other respects the broad-headed type found in this region. Another No. 12, is of intermediate type, with an index of 78·2;⁶ skulls resembling this have been found in the passage-graves, but are thought by some to be the result of hybridization between the dolichocephalic type which predominates in these graves, and the brachycephalic which is found there in small numbers. The two remaining skulls, Nos. 10 and 13, with indices of 70·8 and 72·0, are distinguished by having a very low nasal index, 41·8 in each case. Skulls thus distinguished have been found in some numbers in this region and differ in several important particulars from the other dolichocephalic skulls; the conclusions which I propose to draw respecting this type will be dealt with later.

The question cannot yet be considered as settled, but the balance of evidence at present available seems to show that the people responsible for the Arctic culture were broad-headed, while there seems to be some reason for believing that this culture is ancestral to that of the Lapps. To this we may add the fact that

Abercromby, The Hon. John, *The Pre- and Proto-Historic Finns*, 1898, i, pp. 49-51. Cf. Virchow, R., "Archäolog. Reise nach Livland," *Zeitsch. f. Ethnologie*, Berlin, 1877, ix, p. 422.

² Fürst, Carl M., "Zur Kraniologie der schwedischen Steinzeit," *Kungl. Svenska Vetenskaps-akademiens Handlingar*, Bd. 49, No. 1, Upsala and Stockholm, 1912, pp. 19-22.

³ For details of this excavation *vide* Wennersten, O. V., *Boplats fran stenaldern i Visby Grafningsberättelse*, Fornvannen, 1909, p. 198.

⁴ Almgren, O., *op. cit.*, p. 76.

⁵ Fürst, C. M., *op. cit.*, p. 19.

⁶ *Ibid.*, pp. 40-43.

Dr. Beddoe found a black-haired race in the island of Möen, where brachycephalic skulls have been found in ancient graves,¹ and Dr. Keith has informed me that he has seen one of these skulls the face of which was distinctly Lappish, a character which was claimed for it by Nilsson.²

At one time Professor Montelius was of opinion that before the arrival of the Nordic race in Scandinavia, the peninsula was inhabited by a people of Lappish type. In 1884³ he showed that the later Stone Age culture in South Scandinavia must have belonged to people of the Nordic race, and in reply to Hildebrand and Rygh repeated a view he had expressed ten years earlier⁴ that the Arctic Stone Age culture belonged to the Lapps. It had been objected by Nilsson that the Lapps had first reached Scandinavia at a later date, to which he replied: "If one can no longer suppose that these original inhabitants are ancestors of the present Lapps, may it not be probable that they belong to the same race as the present Lapps and Finns?"

In 1888 he wrote of the skulls found in the graves of the Stone Age: "Some are very like those of the Lapps, but most of them bear a close resemblance to the Swedish skulls of the present day." He adds later: "The smaller number of skulls of a non-Scandinavian type, which occur in the graves of the Stone Age, are, no doubt, relics of the people who dwelt in the country before the Swedish immigration."⁵ This statement was repeated in the French edition of 1895.

The opinions of Professor Montelius must carry great weight with all students of the early history of this region, and it seemed important to ascertain whether he still adhered to the views that he expressed twenty-five years ago, and which have been advanced more recently in a modified form by Kossina⁶ and others, or whether he, too, had become a convert to the newer point of view adopted by Ripley⁷ and more recently by Fairfield Osborn.⁸ To make sure on this point I ventured to ask him his present views on this question, to which request he very kindly replied at length.

That I may not unintentionally misrepresent him, perhaps I may be allowed to quote that part of his letter in which he summarizes his views:—

1. At the end of the ice period a dolichocephalic people entered Scandinavia.

¹ Beddoe, J., "On the Head-form of the Danes," *Mem. Anthropol. Soc.*, London, iii, p. 38. Cf. Taylor, I., *The Origin of the Aryans*, London, 1890, p. 84.

² Nilsson, S., *The Primitive Inhabitants of Scandinavia*, 3rd ed., London, 1868, p. 121. For a description of this skull *vide* Eschricht in *Dansk Folkblad*, Sept., 1837, p. 111.

³ *Nordisk Tidskrift*, 1884, p. 34.

⁴ *Compte-rendu of the International Congress of Anthropology and Prehistoric Archaeology*, Stockholm (1874).

⁵ Montelius, O., *The Civilisation of Sweden in Heathen Times*, p. 37.

⁶ In *Mannus*, I, pp. 37, 40, 47.

⁷ Ripley, *op. cit.*

⁸ Osborn, Henry Fairfield, *Men of the Old Stone Age*, 3rd ed., London, 1918, pp. 486-488, 501.

The evidence from the work of Retzius seems to contradict the statement attributed to Fürst, and it is only fair to the latter to mention that he was dealing with thirty-three skulls in addition to the forty-two described by Retzius. Of these, three have indices of 80 and upwards. Of these three, two, No. 2 from Hvellinge in Scania and No. 11 from Wisby in Gotland, have length-breadth indices respectively of 86·1 and 85·1. The other measurements of these two skulls agree with the two from Wästergötland described by Retzius, except that they are rather smaller. This factor may, perhaps, be accounted for by sex, as one is certainly and the other probably that of a woman; Retzius does not give the sex of his broad skulls, but if they were males this would account for their greater size. Fürst's third broad skull, No. 23, a male skull from Slutarp in Wästergötland, though narrower, resembles them fairly closely in other respects.¹ Thus, taking all the skulls described by Retzius and Fürst, and excluding No. 39 with an index of 81·7, we have four very broad skulls, closely resembling one another, and one of them with Lapp-like features; of these two come from Wästergötland, one from Gotland and one from Scania; we have also a fifth, nearly the same, also from Wästergötland. That is to say, four from Central Sweden and one from Scania. This scarcely supports the view that the number of brachycephalic skulls is comparatively greater in Scania than in Central Sweden.

Moreover, M. Fürst himself in his recent work does not seem to support the view now advanced by Professor Montelius, for he says: "Now if the dolichocephalic Nordic skull belongs to the people and race of megalithic times, presumably the brachycephalic skull is the racial trait of an earlier population."²

It is with great diffidence that I venture to disagree with so eminent an authority as Professor Montelius, but the facts that I have related, together with the evidence from Möen already cited, and that from Rinnekaln, seems to suggest that those archaeologists may be correct who believe the Arctic culture to be contemporary with, and to some extent earlier than, that of the passage-graves, and lends some support to a modified version of the view formerly advanced by Dr. Montelius that the Lapponic population, coming doubtless from the northern half of Russia, entered Sweden as early as, probably earlier than, the Nordic people from the south. The question, it must be admitted, is far from settled, and it would be well if the two types of broad Swedish skulls could be compared with early examples both from Lapland and from Central Europe.

The idea that the authors of the Maglemose culture were the ancestors of the Nordic race, and of the folk of the kitchen-middens, has been advanced for some years, and the evidence is well summarized by Dr. Fairfield Osborn;³ the more closely it is examined the slenderer does it appear. Direct skeletal evidence there is

¹ Fürst, C. M., *op. cit.*

² *Ibid.*, p. 63.

³ Osborn, H. Fairfield, *op. cit.*, pp. 486-488.

none,¹ and the cultural connections between the Maglemose people and those of the kitchen-middens is confined to the fact that a few of the flint implements suggest "certain chipped styles observed in the kjökken-möddings."² The fact that most of the Maglemose implements were of horn and bone, while articles of these materials are comparatively rare in the kitchen-middens,³ makes one hesitate to identify the peoples responsible for these two cultures, while the slight resemblances that occur in the chipping of flint may be due to intercourse, if, as is probable, the cultures slightly over-lapped.

On the other hand, judging by the illustrations available, the implements of the Maglemose culture do resemble in many important details those of Arctic culture, as has been pointed out by Kossina⁴ and Stjerna, who believe that an intermediate stage exists in what is known as the Kunda culture,⁵ which is found widely distributed around the Baltic, though not round the northern parts of that sea. Unfortunately no specimens of any of these cultures have so far reached this country, but from the illustrations and descriptions available, the resemblances between the Maglemose, Kunda and Arctic cultures are closer than between any of them and that of the kitchen-middens.

If, too, I am justified in my suggestion that the Arctic culture is Lapponic, and has come from the East across Northern Russia, we have another argument at our disposal. Of the Maglemose culture Fairfield Osborn states⁶, on the authority of the Abbé Breuil: "The community of style with the painted and engraved figures found in Western Siberia and in the Central Ural region and north of the Altai Mountains denotes rather an Asiatic and Siberian origin."⁷

There seems reason, then, for thinking that the Lapponic people that we have been discussing were not only responsible for the Arctic culture, but for those of the Kunda and the Maglemose which preceded it, and if so they must have arrived in the Baltic area at the very beginning of the Neolithic Age, if not, as has been claimed for them, during the closing phase of the Palæolithic—the Azilian-Tardenoisian Period.

Before passing on to a further consideration of this Lapponic culture, it may be well to discuss the suggested connection between the culture of the kitchen-middens and that of the passage-graves. These, again, are very slight, and are confined to

¹ Kossina, *op. cit.*, identifies certain broad skulls from the North German fens as belonging to people of the Maglemose culture. See also Almgren, O., *op. cit.*, p. 75.

² Osborn, H. Fairfield, *op. cit.*, p. 488.

³ Lubbock, John, *Prehistoric Times*, London, 1865, p. 61.

⁴ Kossina, "Die Herkunft der Germanen" (*Mannus-Bibliothek*, No. 6), Würzburg, 1911; Almgren, O., *op. cit.*, p. 61.

⁵ Smith, Reginald A., "Our Neighbours in the Neolithic Period," *Proc. Prehist. Soc. of East Anglia*, II, iv, pp. 483-485.

⁶ Osborn, H. Fairfield, *op. cit.*, p. 486.

⁷ Breuil, l'Abbé H., "Les subdivisions du paléolithique supérieur et leur signification," *Cong. Internat. d'anthrop. et d'arch. préhist. C. R.*, xiv sér., Genève, 1913, pp. 235, 236.

certain rather remote resemblances between the flint axes of both cultures. In all other respects these two civilizations are remarkably distinct, and the slight resemblances might well have been brought about by cultural contact.

Arguments in favour of racial connection between the authors of these two cultures were at one time drawn from the skeletal remains of two individuals found at Staengenaes, and apparently associated with kitchen-middens there. Both these individuals had narrow heads, with indices of 73·5 and 75,¹ and one, at least, is said to have had a stature of about 5 feet 10 inches. If, then, the men of the kitchen-middens were tall and long-headed, they must, it was thought, be the ancestors of the Nordic people of the passage-graves.

The argument is tempting but needs further investigation. In the first place it may be considered dangerous to place too much reliance on two rather fragmentary skeletons. Also we know that in Late Palæolithic times North Europe was inhabited by various peoples with long heads, some tall and some short, and even among those who were tall great differences in skull shape have been observed. It is at least possible that the kitchen-midden folk and the men of the passage-graves may be descended from two distinct types of tall, long-headed Palæolithic men.

Now among the Stone Age skulls described by Retzius and Fürst, the great majority, sixty-seven out of seventy-seven, have length-breadth indices below 80. Among these are four, distinguished from the others by an extremely low nasal index, 42 and under; these also differ from most of the remainder in being unusually large, perhaps because their owners were of exceptionally tall stature. To this small group one may add three others in which the face is too damaged to enable us to obtain the nasal index, but which agree with the former series in the other characters. It seems possible that this series may be racially distinct from the remaining members of the dolichocephalic group of the Swedish Stone Age. The following table (I, p. 195) will make this clearer.

It will be seen from these figures that the length, breadth, horizontal and sagittal circumferences and maxillary breadth of this series exceed those measurements in the remainder except in one or two instances, while the nasal index, where known, is invariably less.

Now if we compare the figures of this selected series with the few measurements that have been recorded of the Staengenaes skulls, we shall find that they are in close agreement. (See Table II, p. 195.)

The distinction between the selected skulls and the remainder is not so sharp as one could wish, but it is as well marked as one could expect to find it if, as I would suggest was the case, the Nordic invaders met and interbred with the survivors of kitchen-midden people of the Staengenaes type. If such had been the case we should expect to find that some of their descendants resembled closely, but not absolutely,

¹ Nilsson, S., *op. cit.*, p. 117; and French edition 1868, pp. 153–159. See also de Quatrefages and Hamy, *Crania ethnica*, p. 20.

Table I.

No.	Site.	Max. L.	Max. B.	Horiz. Circum.	Sagit. Circum.	Maxil. B.	L.-B. Ind.	Nas. Ind.
F. 1	Hvelling, Scania. Flat grave	188	149	547	380	(106)	79.3	35.0
F. 4	Brösarp, Scania. Flat grave	194	(148)	—	—	—	76.3	—
F. 10	Visby, Gotland. Settlement	195	138	550	385	90	70.8	(41.8)
F. 13	Visby, Gotland. Settlement	193	139	537	380	109	72.0	41.8
F. 14	Gullrum, Gotland. Settlement	192	—	—	395	104	—	—
R. 4	Synneräl, Wästergötland. Passage-grave	192	147	545	400	101	76.6	42.0
R. 42	Askum, Bohuslän. Stone cist	200	148	—	—	—	74.0	—
Limits of variation ...		188 192-200	— 138-149	537 545-550	— 380-400	90 101-109	— 70.8-79.3	— 35.0-42.0
Limits of variation of other dolichocephalic skulls		167-197 199	125-142 146, 147	474-545 545, 555, 556	350-390 394, 395	79-97 100	67.9-79.4	42.3 45.4-53.5

Table II.

No.	Site.	Max. L.	Max. B.	Horiz. Circum.	Sagit. Circum.	Maxil. B.	L.-B. Ind.	Nas. Ind.
—	Limits of variation of selected skulls	188 192-200	— 138-149	537 545-550	— 380-400	90 101-109	— 70.8-79.3	— 35.0-42.0
—	Staengenaes skull, No. 1	200	147	550	—	—	73.5	—
—	Staengenaes skull, No. 2	196	147	556	—	—	75.0	—

their kitchen-midden ancestors, while a few others would resemble them to some extent in one feature or another.

But if the passage-grave folk did not come from the kitchen-middens, what is their origin? To deal with this problem in full would be out of place here, but I may mention that Bogdanof has found in the Neolithic kurgans or barrows in Russia a type which appears to be singularly like the people of the passage-graves. In the north, that is to say towards the Middle Volga Basin, and in the west he found among them a certain proportion of broad and intermediate types, but from the barrows of Soudja, in the government of Koursk, he came across a very homogeneous type. Of twenty-three skulls, nineteen were dolichocephalic, presumably with indices below 75, and four were sub-dolichocephalic, with indices between 75 and 78, and of these four, three were those of women and the last that of a child.¹ In this region, I would suggest, we may find the earlier home of the men of the passage-graves.

Before turning again to the more strictly Finnic problem, I must say a word about some skulls found by Dr. Inostransez on the south shore of Lake Ladoga, and which date from Neolithic times.² Though they do not directly affect our problem, they come from the region we are considering, and I have received a direct invitation from Professor Giuffrida-Ruggeri to deal with them on an early occasion.³

In 1878 ten crania and portions of eight skeletons were found while digging the new Sias Canal from the mouth of the Volkhov eastwards to the River Sias. These skulls have a length-breadth index of from 67·7 to 77·3, a length-height index of from 69·8 to 77·3, and a breadth-height index of from 96·3 to 103·8. The walls of the male crania were distinguished by their thickness, a feature noticed also in the Staengenaes skulls. On the other hand, these skulls were small and their nasal indices comparatively high. These people were of very low stature.

Being short and long-headed it has been thought by some that we should attribute these remains to people of the Mediterranean race, but it seems unlikely that men of this race should have wandered so far to the north-east at so early a date. When we consider the evidence adduced by Collignon regarding the region around Limoges where it was found that an adverse environment stunted even men of the Nordic type,⁵ we may be inclined to attribute this shortness of stature in the Ladoga men to their environment, and to treat this region, too, as an area of misery. Bogdanof, who measured the skulls, found indubitable traces of relationship between

¹ Bogdanof, A. P., "Quelle est la race la plus ancienne de la Russie centrale?" *Congr. Internat. d'anthrop. et d'arch. préhist.*, 11 Sess., Moscow, 1893, i, app., pp. 1-24.

² Inostransez, A. A., *Prehistoric Man of the Stone Age on the Shores of Lake Ladoga*, 1882. *In Russian.*

³ Giuffrida-Ruggeri, V., "Antropologia e Archaeologia," *Archiv. per Antrop. e la Etnolog.*, XLVI, 1916, p. 22.

⁴ Abercromby, the Hon. John, *op. cit.*, i, pp. 53-64.

⁵ Collignon, R., "Anthropologie de la France," *Mem. Soc. d'anth.*, Sér. III, i, 3, pp. 26 *et seq.*, the results of this investigation have been discussed by Ripley, *op. cit.*, pp. 83 *et seq.*

them and those of the Kurgan type, and it is possible to consider them as the result of an early northward migration from the steppes. The great thickness of the skulls suggests as an alternative that we may be dealing with an extension to the north-east of the kitchen-midden folk, though the high nasal index militates against this view; in either case we must attribute their low stature to the effects of environment. A third possibility is that they are the remnant of another of the races that occupied Europe in Late Palæolithic times.

We have seen that Bogdanof found among the Neolithic skulls from the kurgans, that as he approached the basin of the Volga broad skulls became increasingly common, as did intermediate forms. This suggests that a broad-headed race were then occupying the middle Volga Basin. Lord Abercromby has with great care traced the advent of the Finns, that is to say, the people responsible for the Finnish language and tradition, along the valleys of the Kama and the Volga from near Perm, and he concludes that the ancestors of the Finns had reached Europe and settled on the Oka in Neolithic times.¹

Certain distribution maps published by M. A. M. Tallgren² of the Helsingfors Museum show that the earliest metal culture in the Volga area arrived from Siberia and reached only as far as the mouth of the Oka, while during the later part of the Bronze Age the same Asiatic culture reached very little further, except that there were certain outliers in the interior of Finland. During the Middle Bronze Age settlements from Sweden had been made in the coastal region of Finland, curiously enough in exactly the same regions now occupied by the tall, narrow-headed Swedish folk, and these had trade relations with the Volga region, while during the closing phase of the Bronze Age these trade relations had increased, and socketed celts of western origin are found not uncommonly in the valleys of the Volga and Kama. About 500 B.C. we find that the Siberian culture had become dominant in the Volga region, in Finland, the Baltic provinces and East Prussia, and over a considerable area of Sweden. On the other hand Almgren³ has shown, from the evidence set forth by Ailio,⁴ that Scandinavian culture of a type which he calls *batyr* or boat-axe culture, which is found in the passage-graves of Sweden, had reached the coastal areas of Finland before the close of the Neolithic Period.

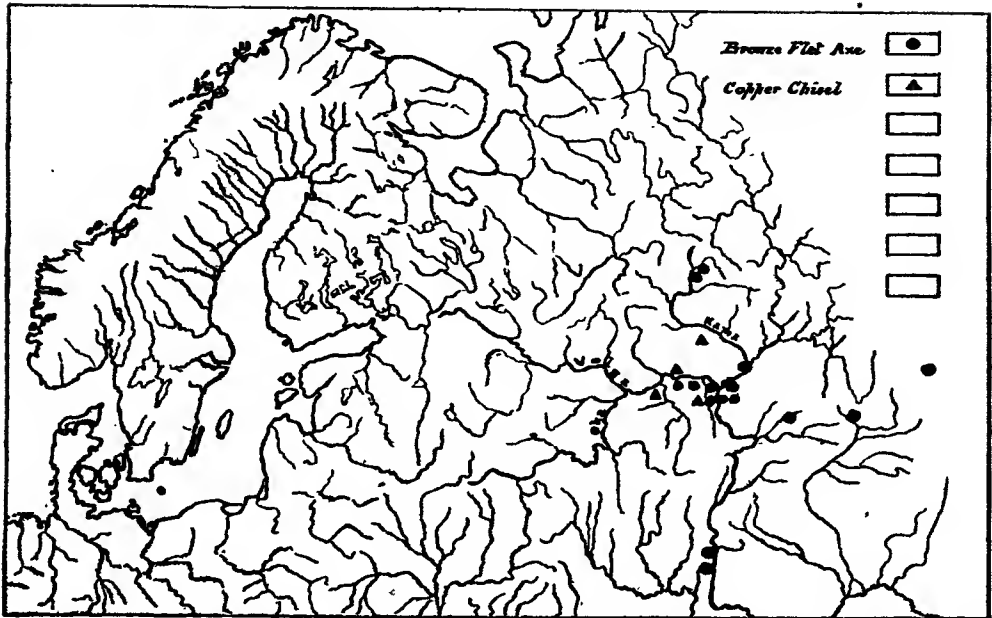
The conclusion which seems to be indicated by the foregoing evidence is that a broad-headed people, with Siberian affinities and of Ugrian speech, had crossed the Urals, descended the Kama and entered the Middle Volga region in Neolithic times, before the close of which they had reached as far as the mouth of the Oka. Hitherto they had been passing through a region of pine forest, but dwelling by the banks of rivers and streams; just above the junction of the Volga and the Oka the oak

¹ Abercromby, the Hon. John, *op. cit.*, i, pp. 85, 86.

² Tallgren, A. M., *Coll. Zaoussailov au Musée Historique de Finland à Helsingfors*, Helsingfors, 1916; *Coll. Tovostine des Antiquités Préhistoriques de Minoussinsk, etc.*, Helsingfors, 1917.

³ Almgren, O., *op. cit.*, pp. 8-26.

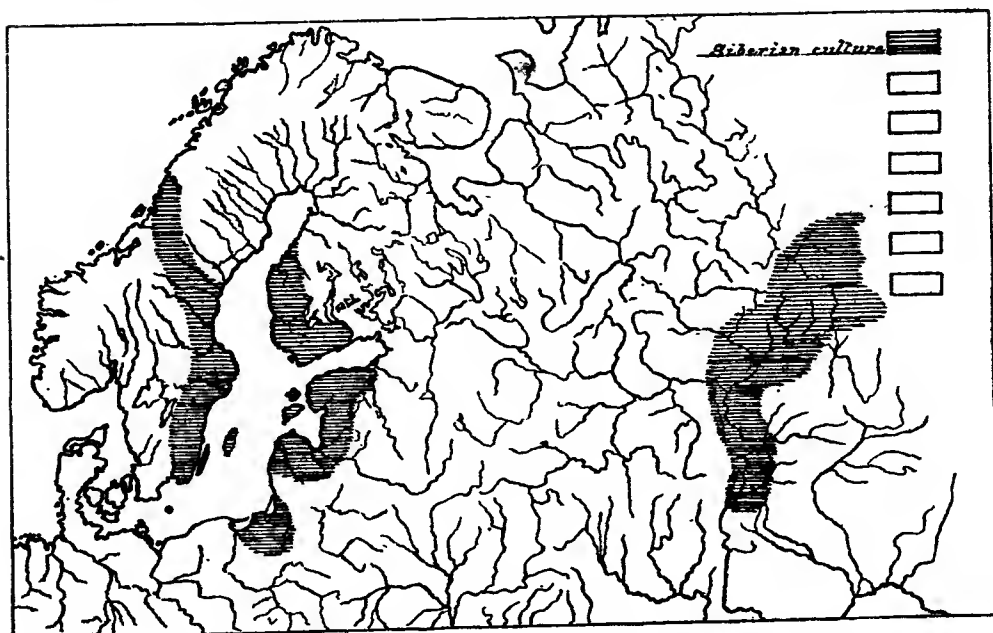
⁴ Ailio, J., *Die steinzeitlichen Wohnplatzfunde in Finland*, Helsingfors, 1909.



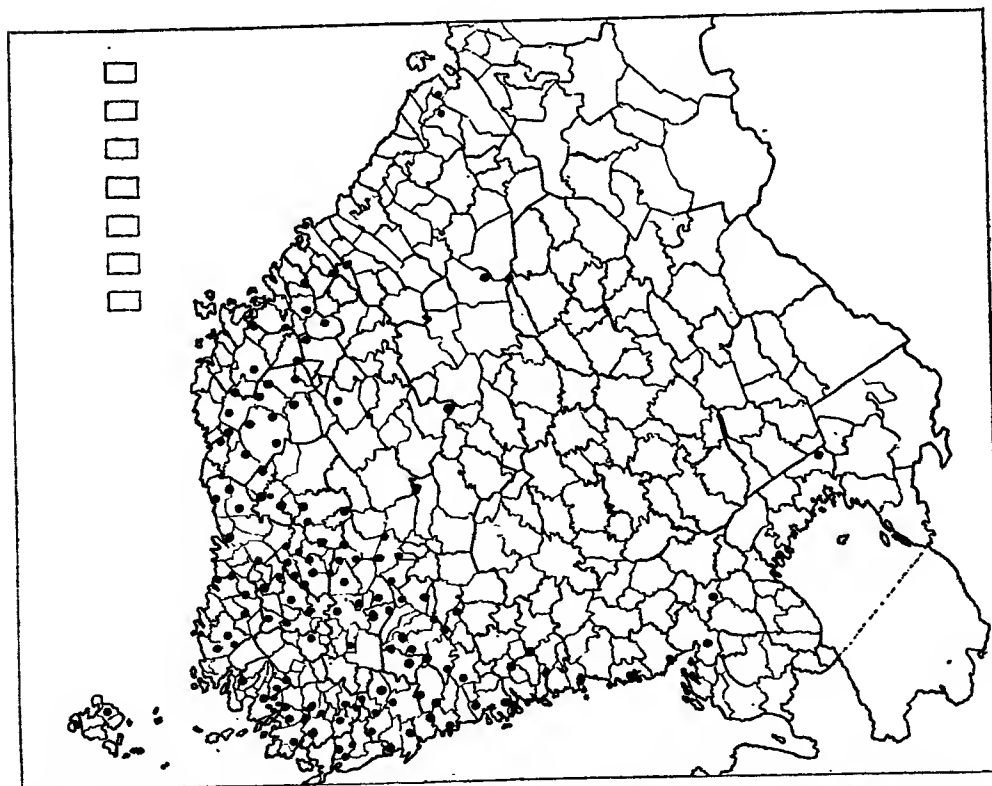
5.—MAP OF NORTH-EAST EUROPE, SHOWING DISTRIBUTION OF SIBERIAN CULTURE IN THE EARLY BRONZE AGE. (AFTER TALLGREN.)



6.—MAP OF NORTH-EAST EUROPE, SHOWING DISTRIBUTION OF CULTURES DURING THE BRONZE AGE. (AFTER TALLGREN.)



7.—MAP OF NORTH-EAST EUROPE, SHOWING DISTRIBUTION OF SIBERIAN CULTURE, 500 B.C.
(AFTER TALLGREN.)



8.—MAP OF SOUTH FINLAND, SHOWING THE DISTRIBUTION OF BOAT-AXES. (COMPILED FROM
THE MAPS OF AILLO AND ALMGREN.)

forest begins, and they appear to have hesitated to penetrate these dense woodlands. During the early phases of the Bronze Age they seem to have been confined to the same area, and to have had little contact with people to the south and none at all with their kindred to the west, but towards the middle of that period they seem to have passed to the north of the oak forest into the lake region of Central Finland, where the forest is also pine, and where they found kinsmen of the Arctic culture. Here they came in contact with Nordic settlers from Sweden, who had lately arrived to occupy certain coastal areas of oak forest, which had been occupied by their kinsmen in Late Neolithic days, and had perhaps been abandoned by them in the interval. The two peoples carried on a trade intercourse for some centuries, but about 500 B.C. the Nordic folk were attracted southwards, and the broad-headed people increased in Finland, and carried their culture over to the northern parts of Sweden, where their Arctic kinsmen were still surviving.

Lastly, I must say a word about the culture known as Fatianovo. "Not far from the village of Fatianovo, about 24 miles north of Yaroslav on the Volga, an ancient settlement and cemetery were uncovered, where all the implements were of stone, though the presence of a green stain of oxide of copper, a piece of bronze wire, a round copper disk, and three pieces of glass, show that it did not belong to the Neolithic Age." The skulls were all long and narrow, having indices varying between 69 and 76.¹ M. Tallgren is inclined to place this culture early in the Bronze Age, and points out that, while the culture has many affinities with the Siberian culture of the Volga region, the pottery found bears a close resemblance to the pots with hemispherical bases used by the steppe-folk of the kurgans.² These factors, taken together with the evidence from the skulls, seem to indicate that we are dealing with an outlying settlement of those kurgan or steppe-folk, who had settled in the Volga region, and adopted much of the culture of the people they found there, though they retained their traditional type of pottery.

The evidence that I have cited shows that the racial problem in North-Eastern Europe is by no means simple, and it suffers at the present time from this disability among others. There are many gaps in our knowledge, some of which will doubtless be filled in as the result of future inquiries; consequently many conclusions are still tentative. Nevertheless, if we are to progress towards a solution of this problem, it is necessary to make a working hypothesis, even if it have to be discarded, or at any rate considerably modified, when fresh facts come to light. Such an hypothesis I will venture to place before you briefly, fully realizing its provisional nature, and that it differs in many important respects from the generally accepted view.

In Late Palæolithic times various types of long-headed men occupied the plain of North Europe, which was invaded in Solutrian times by a very nomadic race, also long-headed, from the Eurasiatic steppes. These people were hunters of wild horses,

¹ Abercromby, the Hon. John, *op. cit.*, i, pp. 90, 92.

² Tallgren, A. M., *Coll. Zaoussailov*.

and in one case, at least, at Brünn in Moravia, the skeleton of a man of this race was found "partly tinted in red."¹ These people retreated to their former habitat at the advent of Magdalenian times, giving rise in due course to that race of nomad steppe folk, called red-skeleton men by Minns, and kurgan-men by Myres and Bogdanof.

In Azilian-Tardenoisian times the true Mediterranean race, bearing with them the Capsian culture, spread from North Africa through Spain to people the west of Europe,² mixing with and absorbing the greater part of the earlier Aurignacian-Magdalenian races, remnants of which retired to various outlying places, some of them to the Danish kitchen-middens, some perhaps to the shores of Lake Ladoga, while others, as Fleure has shown us, found a refuge in Plynlimmon.³ Meanwhile a broad-headed race with Mongol resemblances and perhaps Mongol affinities travelled westwards across the tundra, between the ice sheet and the advancing pine forest to the Baltic (Ancylus) Lake, in the shallows of which they lived, apparently on rafts, or perhaps on platforms on the frozen marshes. These Maglemose people may in their later phases have come in contact with the kitchen-midden folk and borrowed cultural details from them, but their civilization was one rather of bone than of stone.

When the sea forced its way through the Danish sounds, the Maglemose people took to a shore existence and, perhaps pressed eastward and northward by the kitchen-midden folk, settled farther up on the Baltic shores, as far north as the Aland Islands; this is the stage of their civilization known as the Kunda culture. Meanwhile the nomad steppe-folk, the descendants of the Solutrian raiders, now specializing as the Nordic race, were roaming on horse-back the open steppes with their cattle, and penetrating the park-lands to the north and west when the grass grew scanty. In the north they came in contact with fresh waves of Mongoloids, migrating slowly from Siberia, and among these a few settled, gradually developing a hybrid Nordic-Mongoloid strain and the Fatianovo culture, while on the edge of the western forest others met and mixed with outliers of the Alpine race of Central Europe, there forming, as I have suggested on a former occasion, a hybrid Nordic-Alpine strain, which we call the Beaker-folk, and the Tripolje culture.⁴

Towards the latter half of the third millennium a period of drought seems to have occurred in the steppe lands of the northern hemisphere, making these grasslands uninhabitable, and thus, as I have shown before, caused the Nordic steppe-folk to disperse in various directions. Of their south-western dispersal I have treated elsewhere;⁵ here I wish to deal only with their north and north-western movements. It may be to this date we must attribute the retreat to the Volga Basin which resulted in the production of the Fatianovo culture and the hybrid type known as the Red

¹ Osborn, H. Fairfield, *op. cit.*, p. 337.

² *Ibid.*, p. 522.

³ Fleure, H. J., and James, T. C., "Geographical Distribution of Anthropological Types in Wales," *Journ. Roy. Anthropol. Inst.*, xlv, 1916, pp. 115, 116.

⁴ Peake, Harold, "Racial Elements concerned in the First Siege of Troy," *Journ. Roy. Anthropol. Inst.*, xlv, 1916, pp. 154 *et seq.*

⁵ *Ibid.*

Finn, but the main body seems to have crossed or passed round the plain of North Germany to Denmark, where perhaps they met and coalesced with the remnant of the people of the kitchen-middens; they subsequently passed across the Danish islands to Sweden as the men of the passage-graves, driving before them the Mongoloid aborigines, who had now reached the stage of Arctic culture.

But how was it that these nomad Nordic cattle-men of the Russian steppe adopted the practice of building graves of large stones, adopting, in fact, a megalithic culture? This question brings us to the edge of a large subject, which can only be touched on here. Professor Elliot Smith and his disciples have given us strong evidence for believing that this megalithic culture arose in the Eastern Mediterranean, and was carried west and north by a people prospecting for the precious metals,¹ and Professor Fleure has told us that the racial type of these "Prospectors," if I may use this term for them, seems to be a hybrid between that of the Mediterranean and Anatolian types,² so much so that both Elliot Smith and Giuffrida-Ruggeri have spoken of them as "Maritime Armenoids."³ It is now generally admitted, I believe by Elliot Smith himself, that these Prospectors reached the west by the middle of the third millennium, and as they were in search of precious objects, they cannot have failed to discover that substance, so widely prized and renowned in antiquity, the precious amber of the Baltic coast. Hither, I would suggest, had the Prospectors come before the arrival of the steppe-folk, and here the two races first met, and here, in the Danish Isles, did the Nordic steppe-folk receive their first initiation into the mysteries of megalithic architecture.

But we have seen that the megalith builders are thought to be a hybrid between the Mediterranean and Anatolian types, and skulls of this mixed type have been found with megalithic associations at Anghelu Ruju in Sardinia.⁴ We ought, also, to find such types among the Scandinavian series.

Now, as I have shown, the Swedish Stone Age skulls fall into three types, narrow, medium and broad, and it has been suggested that the medium skulls are hybrids between the other two. But I have given reason for believing that of the three broad skulls described by Retzius, one at least, and almost certainly two, belong to the folk of the Arctic culture, while the third, that from Scania, is different. Can this be the skull of a Prospector?

The Nordic invaders spread northwards, driving before them the men of the Arctic culture, and enslaving a few. There seems to have been comparatively little intermarriage, and the Arctic folk retreated further to the north, where, perhaps

¹ G. Elliot Smith, *The Migrations of Early Culture*, Manchester, 1915; Perry, W. J., "The Relationship between the Geographical Distribution of Megalithic Monuments and Ancient Mines," *Manchester Lit. and Phil. Soc.*, LX, i.

² Fleure, H. J., and James, T. C., *op. cit.*, pp. 137-142.

³ Giuffrida-Ruggeri, V., *op. cit.*, p. 10; Elliot Smith, G., "Sulla migrazioni dei marinai mediterranei in Oceania e in America nei tempi precolumbiani," *Riv. de Antrop.*, XX, 1916.

⁴ Giuffrida-Ruggeri, V., *op. cit.*, pp. 8, 9; Sergi, G., *La Sardegna*, Torino, 1907, p. 16.

reinforced by subsequent migrations from the north-east, they still survive as Lapps.

Meanwhile a slow but steady progress westward was being made by the Mongoloid tribes of the Volga, till about the middle of the Bronze Age some of them were settled on the Finnish lakes, and were in touch with the Nordic folk, who had already occupied part of the sea-board. Thus these two people remained side by side for some centuries, perhaps intermarrying, though probably not to any great extent, but certainly exchanging implements and other products.

Soon after 500 B.C. the Nordic people settled in the Norwegian fjords, and began that phase of piracy for which they became notorious, and which lasted for about 1500 years. The rich lands to the south and west were more profitable than the cold and barren lands to the north-east, and there was a gradual shift of the Nordic population in a south-westerly direction. This enabled the new Mongoloid tribes to settle more thickly in Finland, and to advance to the shores of the Gulf of Bothnia, even to carry their products into Sweden, either to settlers of their own kin, or more probably to their more distant cousins, the Lapp descendants of the Maglemose, Kunda and Arctic folk. Thus, I believe, the Suomi, a Mongoloid tribe of Siberian origin, arrived in Finland, and introduced to that country their language and tradition. Doubtless some of the Nordic folk remained by the sea-shore, but the bulk of those now occupying the maritime strip are not so much descendants of the Bronze Age settlers, as of Swedes who settled there after the fashion of piracy had ceased—from about A.D. 1150 to the present day.

One word more as to the Red Finns, the men of tall or medium stature, red hair and high cheek-bones, who are found specially among the Finnish-speaking tribes in the Volga Valley, though not uncommonly in the Baltic provinces and in Scandinavia itself. These, as I have suggested, have been derived from the Nordic-Mongoloid hybrids who produced the Fatianovo culture. More than half a century ago Nilsson pointed out that Scandinavian tradition distinguished between the followers of Thor and those led thither by Woden. He suggested that the followers of Thor were red-haired as distinguished from the fair-haired companions of the All-father.¹

If the hypothesis that I have advanced is in the main correct, Thor must have led his red-haired followers from the banks of the Volga, while Woden brought his fair-haired warriors from the Russian steppes. It would be interesting if the folklorists would inquire how far Scandinavian tradition supports this view. It would be interesting, too, to ascertain whether among the legends and customs connected with Thor and his worshippers there are any which have distinctly Siberian affinities.

¹ Nilsson, S., *op. cit.*, pp. 234-243. In this connection see also Chadwick, H. M., *The Cult of Othin*, London, 1899, pp. 68-71.

STRING FIGURES FROM NEW CALEDONIA AND THE LOYALTY ISLANDS.

By R. H. COMPTON, M.A. Cantab. (Professor of Botany, University of Cape Town ; late Drosier Fellow of Gonville and Caius College, Cambridge).

INTRODUCTION.

THE following String Figures (or Cat's Cradles) and String Tricks were collected during my travels in New Caledonia and the Isle of Pines in 1914. They were all learnt directly from the natives, and were in all cases transferred to paper at once. Many of them appear to be novel ; others are more or less closely related to figures which occur in other parts of the globe ; while others are identical with previously described designs, but bear different names and interpretations from those which they receive elsewhere.

No attempt will be made in what follows to distinguish figures of pure New Caledonian origin from those of pure Loyalty Islands origin. In many instances the same figure was known to natives of both. The races which inhabit the Loyalty group are probably of different descent from those inhabiting the "mainland" of New Caledonia ; but a considerable amount of recent intermixture has taken place, especially by way of Loyaltian immigration into "la grande terre." In the coastal districts around Houailou, for instance, Loyaltian admixture is often observable in the physiognomy of the inhabitants, this being in contrast with the interior and northern parts of New Caledonia, which are more remote geographically from the Loyalties, and which contain a population of the primitive New Caledonian type.

It appears probable that the New Caledonian natives have learnt more from the Loyaltians than vice versâ. Cat's Cradles are almost always learnt in childhood, and the adolescent or adult Loyaltian immigrants would teach their children Loyaltian string tricks ; the reverse process, viz., the learning of New Caledonian figures by Loyaltian natives, would go on to a much smaller extent, owing to the relatively slight immigration into Lifu, Maré and Uvea from the mainland. Consequently it is possible to assume that, of the following figures, those learnt from Loyaltian natives are probably of true Loyaltian origin, while those learnt from natives of New Caledonia must remain of doubtful antecedents.¹

¹ I was informed on good authority that a considerable trade formerly took place between the Loyalty Islands and the mainland around Houailou and Ponérihouen, Loyaltian children being brought in barter for serpentine tools, tree-trunks for pirogue construction, and other articles in which the Loyalties are deficient.

I paid no visit to the Loyalty Islands themselves, and the Loyaltian natives from whom I learnt some of the string figures were temporary or permanent residents of New Caledonia.

METHOD OF DESCRIPTION.

In describing the mode of construction of the different designs I shall use the method proposed by Dr. Rivers and Dr. Haddon (1902). Recognized abbreviations, such as Position 1, Opening A, Navaho, Caroline Islands Extensions, will be adopted, and cross-references to save repetition will be used. The constructions will be divided into paragraphs for convenience of reading and reference: but no real discontinuity in the rapid native manipulation is implied. Constant reference will be made to the valuable text-book, *Cat's Cradles from many Lands*, by Miss Kathleen Haddon (Mrs. Rishbeth); and some tricks described therein will be mentioned by name without repeating constructions or giving figures. I take this opportunity of thanking the author for numerous suggestions of which I have made use. To my wife also I am indebted for much assistance in the technical part of this paper.

The titles of the figures will be given in English: they were learnt in English (or rather *bêche-de-mer*), French, and in the native languages. It was often difficult or impossible to ascertain titles, even where existent, and some few figures will have to be left nameless for the present.

Comparative notes have been added at the end of each construction, when demanded. With regard to the general characteristics of the whole group of figures, and their relationships with those from other areas, certain comments may here be made.

GENERAL CHARACTERISTICS.

Nearly all the figures are symmetrical about a plane parallel with the hands and midway between them. When slight asymmetry exists in the initial stages of the construction the subsequent stages are often as symmetrical as they can be. There is no attempt at the complicated asymmetrical picture-making which is so marked a feature of the Eskimo figures. The majority of the figures are more or less complex meshworks; and in some cases the meshwork is progressively increased in complexity by the repetition of one phase of the construction (*e.g.*, in "Sardines" and "Bird's Nest"). In some cases there is an attempt at pictorial representation of moving objects. This may be of the crudest kind, as in the "Two Men," or it may reach the high degree of realism shown by "Porker," a figure unequalled in this respect outside the Eskimo countries.

A favourite conclusion to the figure is the insertion of the hand of a spectator into one of the spaces in the design, and the pulling free of the strings around it.

Of figures, or rather games, for two players, I saw three examples, of which one only is here described.

A novel *motif* is that of "Look!" in which the player's object is to dazzle the beholders by the speed with which the meshwork is made and unmade. Only one topographical figure, in which a feature of scenery is depicted in string, was collected: this is the "Rock of Waondeli."

Several modes of extension are employed. The so-called "Caroline Islands Extension" is very frequent. The "Two Men" and "Porker" figures have a peculiar method of extension and movement. The feature shown by "Porker," whereby the extension is made in the plane at right angles to the main axis of construction, is rare and interesting.

The appellations of the figures, where any exist, are on the whole reasonable and intelligible to the European mind. In this respect the New Caledonian titles, in common with Melanesian figures as a whole, steer a middle course between the comparative exactitude of the North American and Eskimo, and the incomprehensibility or remoteness of the Caroline Islands.

GEOGRAPHICAL AFFINITIES.

In the annexed Table an attempt is made to summarize the relationships of individual New Caledonian and Loyaltian string figures with those occurring in other parts of the world. The first column contains the index numbers, the second the names of the figures described in the present paper. The remaining columns contain entries when a sufficiently close similarity exists to the figures in the second column. (References are given under the several figures.) The Cf. used in certain entries indicates a somewhat more distant similarity. The asterisk (*) is used to indicate the presence of the figure in an area, but the absence of a distinctive name for it.

An examination of the Table reveals the following points. No fewer than 17 out of the 27 figures recorded as New Caledonian have relationships in one or other of the three Melanesian areas (North Queensland, Torres Straits, New Guinea). Six New Caledonian figures are paralleled in the Caroline Islands, and all these six are also represented in one or more of the other Melanesian areas.

With regard to the extra-Australasian relationships it will be seen that in general the figures in question are almost cosmopolitan. The one South American trick (the "Fly") is almost ubiquitous. Of the six African figures, four are widely distributed; one (the "Hanging" trick) is of a very common type, and in one (the "Fighting Lions") the resemblance is rather remote. The two Andamanese tricks, the one Japanese and the one Filipino trick, which have analogies in New Caledonia, are all of wide distribution. Among the four North American instances one is of general distribution, and in two others the resemblance, though rather striking, is

Melanesia.					Caroline Islands.	America, North and South	Africa, East, West and Central.	Other Localities.
New Caledonia and Loyalty Islands.	North Queensland.	Torres Straits.	New Guinea.					
I. Two Men ...	—	—	—	—	—	—	—	Cf. U.K., etc.
II. Outrigger Canoe ...	—	—	—	—	—	Cf. Dressing Skin (N.)	—	—
III. Child ...	—	—	—	—	—	—	—	—
IV. Bracelets ...	Four Shrimps	—	—	—	—	—	—	—
V. Nameless ...	—	King Fish Dugong	Dugong	—	Knife	—	—	—
VI. Nameless ...	Pouch	—	—	—	—	—	—	—
VII. Butterfly ...	Sun Clouded Over Sun with Full Rays	* (Cf. No. XIII)	—	—	Stone Money Stone of Sachoas (Cf. No. XIII)	—	Moon (C.) (Cf. No. XIII)	Andaman (Cf. No. XIII)
VIII. Rock of Waondeli	—	—	—	—	—	—	—	—
IX. Star ...	—	—	—	—	—	Cf. Many Stars (N.)	—	—
X. Nameless ...	Turtle	—	—	—	Ten Men Betel Leaf	—	Owu Face Mark (W.)	Andaman
XI. Look ! ...	—	—	—	—	—	—	—	—
XII. Nameless ...	—	—	—	—	—	—	—	—
XIII. Nameless ...	Sun Clouded Over	* (Cf. No. VII)	—	—	Stone Money Stone of Sachoas (Cf. No. VII)	—	Moon (C.) (Cf. No. VII)	Andaman (Cf. No. VII)

Melanesia.				Caroline Islands.	America, North and South.	Africa, East, West and Central.	Other Localities.
New Caledonia and Loyalty Islands.	North Queensland.	Torres Straits.	New Guinea.				
XIV. Sugar Cane ...	—	—	*	—	—	—	—
XV. Sardines ...	Fish Hawk Four Shrimps	—	—	—	—	—	—
XVI. Bird's Nest ...	—	—	—	—	—	—	—
XVII. Bird-Lime ...	Zamia Tree Zamia Nuts Bandicoot Giant Crane	—	—	—	—	—	—
XXVIII. Looper Caterpillar	—	—	*	Dirruët	—	—	—
XIX. Porker ...	—	Little Fishes	Island of Davane	—	—	Cf. Fighting Lions (E.)	—
XX. Lightning ...	—	—	—	—	Lightning (N)	—	—
XXI. Fly ...	—	—	Bumble Bee	—	Fly (S.)	Locust (C.)	—
XXII. Uprooting Maniana	—	Mouse	—	—	* (N.)	* (C.)	Japan Philippines
XXIII. Putting on Basket	—	—	—	—	—	Hanging Trick (C.)	—
XXIV. Nameless ...	—	—	—	—	—	—	—
XXV. A Lifu Trick ...	—	—	—	—	—	—	—
*	—	Lizard Turtle Intestines	—	*	—	—	—
*	—	Throwing Fish-Spear	—	—	—	—	—

by no means exact ; the fourth trick, " Lightning," affords a curious example of coincidence, and a wider distribution may well be prophesied.

From this analysis it is clear that the New Caledonian string figures belong to the Melanesian type, of which the Caroline Islands figures represent a highly elaborate offshoot (as is evinced by their great complexity and their frequently traditional or unintelligible titles). In addition to Melanesian figures, New Caledonia also possesses several of a cosmopolitan type. The North American connection, if not illusory, is hard to explain.

If we freely admit that the New Caledonian string figures are typically Melanesian, the search for more exact affinities cannot be successfully prosecuted in the present insufficient state of our information. The slightly greater number of parallels with North Queensland is quite probably to be explained by the greater number of figures known from that area than from the Torres Straits or New Guinea. Moreover, it is important not to lay too much stress on the present comparative table, for in many cases (including all the North Queensland figures) the completed design only is known, the mode of construction being unrecorded.

The main conclusions to be drawn are, first, the relationship of the New Caledonian and Loyaltian populations to the Melanesian type, a conclusion in full accord with all other evidence ; and second, reciprocally, the reaffirmation of the value of string figures as indices of broad racial connections.

I. *The Two Men*.

This simple trick was taught me by a New Caledonian man of the Couliné tribe, near Nakety.

- (i) String on L.H. in Position 1, and over R.H. wrist.
- (ii) With R.H. index hook down and pull out L.H. palmar string, letting R.H. wrist loop slip off over it ; pull tight. Turn the long loop thus formed, without twisting, backwards over the three middle digits of the L.H., and pull tight behind the L.H. There should now be " catches " lying between L.H. thumb and index and between L.H. ring and little fingers respectively.
- (iii) Keeping these catches held firmly in position, take with the R.H. the string passing round the radial side of the L.H. thumb and the string passing round the ulnar side of the L.H. little finger, and pull them out to their full extent and to an equal length. Release R.H.
- (iv) With R.H. seize the two inner strings of the long pendent loops (viz., the prolongations of the L.H. palmar string), and pull them equally and gently towards you. This has the effect of bringing the two " catches " which

represent the "Two Men," out of hiding; they approach one another, join company, and come towards you.

- (v) When the two "catches" have reached the R.H., pull the two outer strings of the long pendent loops. The "Two Men" are now supposed to be afraid; they run for their lives, part company, and hide themselves again in their original positions.

The method of making the "Two Men" walk is the same as that used in the much more complicated and realistic figure known as the "Porker" (No. XIX, p. 229). A coincidental resemblance may be noticed to the Scottish "Tallow Dips," collected by Rev. J. Gray (1903), and quoted by Miss Haddon (1911, p. 74).

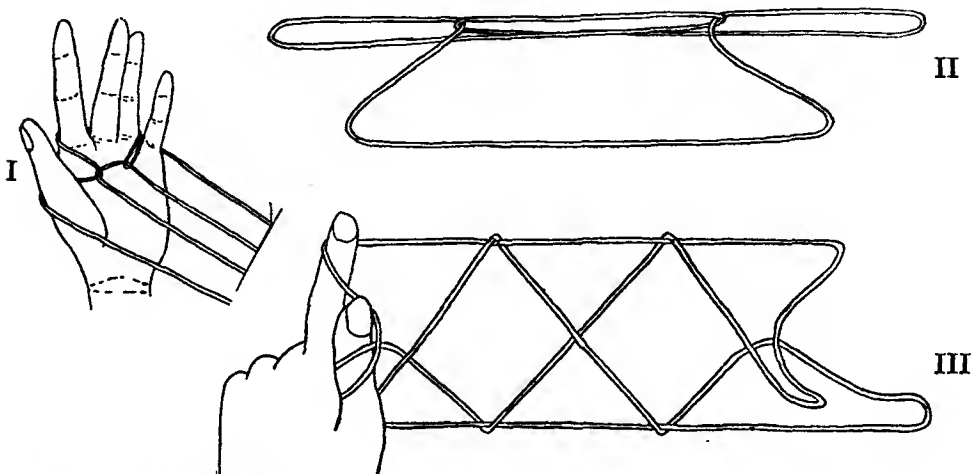


FIG. I.—THE TWO MEN.

FIG. II.—AN OUTRIGGER CANOE.

FIG. III.—A CHILD.

II. *An Outrigger Canoe.*

I learnt this figure from New Caledonian women at Houailou, who called it by a word resembling the French "bateau"; but as they knew no other French I could not be certain that a boat was intended. The figure, however, would serve as a simple representation of an outrigger canoe or pirogue such as the natives use.

- (i) Opening A.
- (ii) Pass thumbs distal to radial index string and take up on them from the proximal side the ulnar index string.
- (iii) Navaho thumbs (assisting process with mouth).
- (iv) Release little fingers and extend.

The figure bears a superficial likeness to a figure collected by Mr. Harlan Smith (1900) from the Thompson Indians (N. America) and known as "Dressing a Skin." (See Miss Haddon, 1911, p. 45.)

III. *A Child*.

Learnt from a New Caledonian woman at Hienghène, under the name *Mouau* (= a piccaninny, or child).

- (i) Opening A. Release thumbs.
- (ii) Pass thumbs proximal to the strings, take up on their backs both radial and ulnar little finger strings and return.
- (iii) Insert thumbs into index loops from proximal side and take up radial index string. Navaho two proximal thumb loops over the distal one. Release indices.
- (iv) With thumbs take up from proximal side radial little finger strings, keeping them distal.
- (v) Pass indices distal to thumb loops and insert them from distal side into proximal thumb loops ; return, taking up on their tips the proximal radial thumb string. Caroline Islands extension.
- (vi) Another player can now put his hand through either of the central diamonds. The near hand of the first player is then withdrawn, and the strings pull free of the second player's hand.

The name applied to this figure possibly refers to its unusual simplicity.

IV. *The Bracelets*.

Learnt at Hienghène from a New Caledonian woman, who gave the name *Goot* (= bracelets) to the figure.

- (i) Take a small length of the string between the hands, and make a small hanging loop by passing the R.H. away from you and towards the L.H. Insert indices into this small loop and thumbs into the larger loop, both pointing downwards, and extend.
- (ii) Lay the figure, consisting of near (thumb) and far (index) loops, on the lap and remove hands.
- (iii) Pass both hands from above through the near loop, and bring them up again towards you under the near string, but do not extend. With little fingers hook up the farthest string on the lap from the far side, and bring them up again towards you in the far loop. Extend. There should now be loops on wrists and little fingers.

- (iv) Take off L.H. wrist loop and replace it on L.H. thumb ; take off R.H. wrist loop and replace it on R.H. thumb.
- (v) With thumbs take up from proximal side radial little finger strings. With index tips take up from proximal side ulnar thumb strings. Caroline Islands extension.
- (vi) A second player puts a hand through each of the two central diamonds. The first player takes out his own hands and seizes the four strings which lie between the second player's hands ; he pulls these strings, and the whole figure comes free of the second player's wrists.

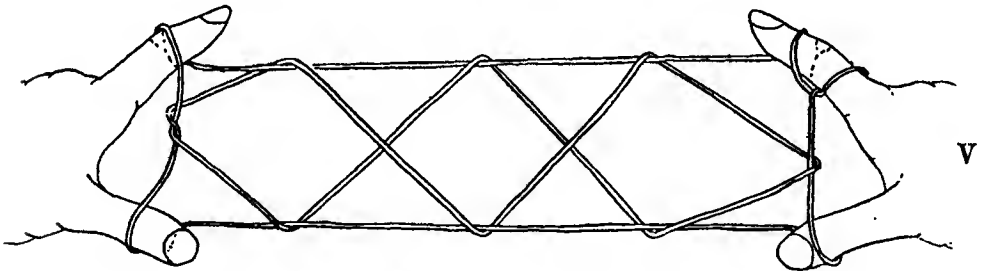
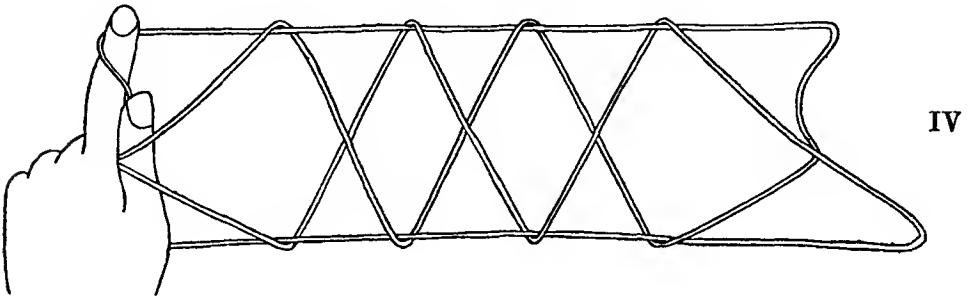


FIG. IV.—THE BRACELETS.

FIG. V.—NAMELESS.

The figure here illustrated, though differently constructed, is almost identical with that stage in No. XV, "The Sardines," which represents four fishes ; and with a figure from North Queensland entitled "Four Shrimps." (See Roth, 1902, Pl. VIII, Fig. 2, where, however, no mode of construction is given.)

V. *Nameless.*

Learnt from New Caledonian women at Houailou, from whom, however, I could obtain no name.

- (i) Position 1 on L.H. only.
- (ii) Pass R.H. index from proximal side into the long pendent loop ; hook down the L.H. palmar string, and pull out to full extent. Release R.H.

- (iii) Repeat paragraph (ii), and then put pendent loop on R.H. in Position 1.
- (iv) Take up L.H. palmar string on R.H. index from proximal side and extend, as in Opening A.
- (v) With L.H. thumb take up from proximal side L.H. radial little finger string. Pass R.H. thumb distal to R.H. radial index string, and take up from proximal side R.H. ulnar index string. Keep these new thumb loops distal.
- (vi) With tip of L.H. index take up from proximal side proximal ulnar thumb string. With tip of R.H. index take up from proximal side R.H. radial index string.
- (vii) Navaho thumbs. Release little fingers. Extend by turning tips of digits inwards and then downwards.
- (viii) There are three "diamonds" in the figure. Another person puts his hand through the central diamond. The player then withdraws his L.H. and pulls sideways with his R.H., when the strings come free of the second person's wrist. (If the R.H. is withdrawn instead of the L.H., the figure does not pull free.)

This figure is strongly reminiscent, both in the initial stages of its construction and in the final result, of the "King Fish" (Murray Island), or "Dugong" (Mabuiag), collected by Dr. Haddon in the Torres Straits (see Miss Haddon, 1911, p. 13), and of the first stage of the "Dugong," collected by Dr. Landtman (1914, p. 229) from the Kiwai of British New Guinea (which is made by the Torres Straits method). It is almost identical with the "Knife," collected (without mode of construction) by Raymund (1911, p. 50, No. 44) in Palau (Caroline Islands). In one stage or another of all these similar figures the hand of a second player is inserted into the mesh and either caught or released.

VI. *Nameless*.

Learnt at Houailou from New Caledonian women, from whom I could learn no name.

- (i) String wrapped once round big toe.
- (ii) Put whole hands away from you into the large loop; turn them outwards (in opposite directions) and downwards, and bringing them around outside the two strings respectively, pass them away from you again into the large loop.

- (iii) With indices hook up the dorsal big-toe string, and let the wrist loops slip off. Insert all digits away from you into these hooked-up index loops, in order to extend them, and draw tight.
- (iv) Alternately separate the hands and bring them together, this producing a sawing movement in the figure.

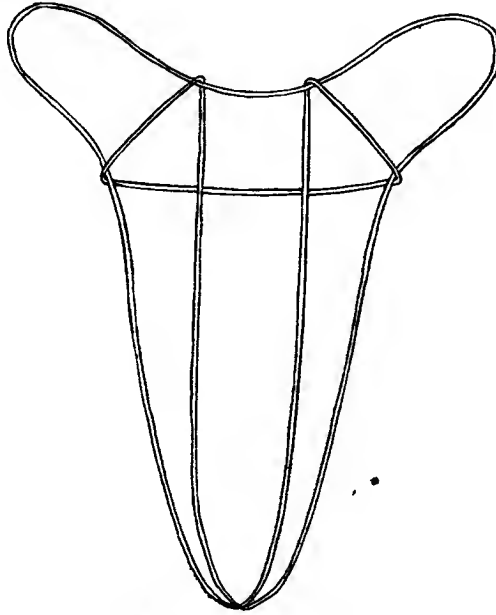


FIG. VI.—NAMELESS.

This figure is almost identical with one collected in North Queensland (Princess Charlotte Bay and Pennefather River) by Roth (1902, Pl. III, Fig. 7, but without mode of construction), and representing a "Pouch, indicative of a kangaroo."

VII. *A Butterfly.*

I learnt this figure from a Maré (Loyalty Islands) man at Ngoye on the mainland ; it was also known to a New Caledonian woman at the same place.

- (i) Opening A.
- (ii) Insert all fingers from distal side into thumb loops, throwing radial thumb string over back of hand. Pass thumbs from proximal side into the loop thus formed, so making it a wrist loop. (This is all done rapidly in one movement.) There are now loops on wrists, indices, and little fingers.
- (iii) Turn thumbs towards you, pass them downwards and away from you proximal to wrist loops and into little finger loops from proximal side ; take up ulnar little finger string and return. Release little fingers.

- (iv) Transfer index loops to little fingers.
- (v) Take up on thumbs the radial little finger strings, keeping them distal. With indices take up from proximal side ulnar thumb strings.
- (vi) Release thumbs and little fingers, and extend gently,¹
- (vii) Lay the figure on your lap so that the surface which has been towards you is now uppermost.
- (viii) Insert little fingers and thumbs into the old wrist loops from above, and pass them away from you; bring the thumbs up from below inside the former index loops and the little fingers outside them. Raise the figure from the lap and extend gently.

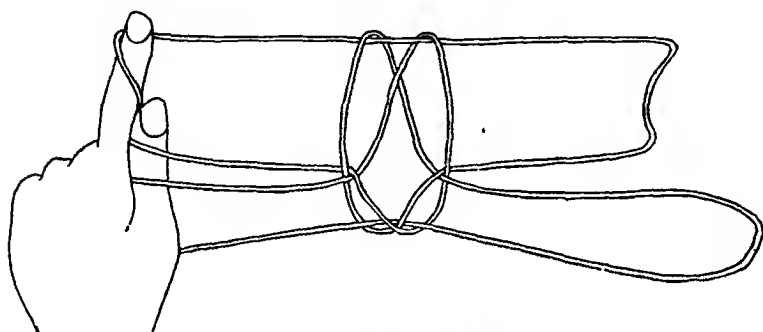


FIG. VII.—A BUTTERFLY.

- (ix) From the ulnar side of each thumb there pass two strings, one being palmar and the other going to the centre of the figure; grip both firmly between thumbs and indices. With the tips of indices take up from proximal side the string going to the centre of the figure, and extend by turning palms away from you. Caroline Islands extension.

The figure, I was informed, represents a butterfly, which can be made to flap its wings by turning the palms alternately away from you and towards one another. It also has an obscene sexual significance.

The stage reached at the end of paragraph (vi) is closely similar to "The Sun Clouded Over," from North Queensland, and the final figure is likewise paralleled by its sequel "The Sun with Full Rays." These figures were collected by Roth at Cape Bedford (1902, Pl. X, Figs. 1 and 2), but their mode of construction is not described. Though the first stage bears a close resemblance to the "Moon" from Central Africa (Miss Haddon, 1911, p. 31), the second stage diverges widely from the continuation of that figure known as "The Moon Gone Dark" (*ibid.*, p. 32). Compare also my New Caledonian No. XIII.

¹ The resulting figure is almost exactly represented by Fig. XIII A (p. 222), if inverted.

VIII. *The Rock of Waondeli.*

Learnt from a Lifu (Loyalty Islands) man, who called it *Giti Waondeli*. (*Giti* = rock; *Waondeli* is the name of a "devil" or spirit.)

- (i) Opening A.
- (ii) Pass indices distal to little finger loops, bend them over the ulnar little finger string, bring them proximal to little finger and index loops, and insert them into thumb loops from distal side. Return, taking up ulnar thumb string. Release thumbs.
- (iii) Pass indices into little finger loops from distal side and turn them up towards you proximal to the other strings.
- (iv) There are now three loops on each index; the radial strings of two go to the centre of the figure, the third goes across the palm. With thumbs take up from proximal side and close to the indices the two radial index strings which go to the centre of the figure. Release little fingers.

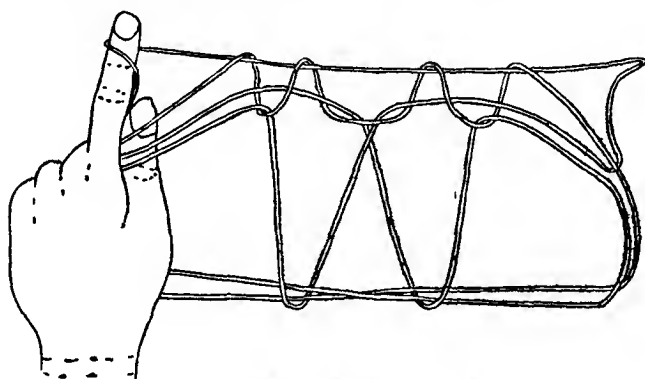


FIG. VIII.—THE ROCK OF WAONDELL.

- (v) Of the three ulnar index strings one goes straight across the figure. Insert little fingers from proximal side into index loops and take up the other two ulnar index strings on their backs, bringing them proximally to the one going straight across. Release indices.
- (vi) Grip the two ulnar thumb strings between thumb and base of index. Insert indices into thumb loops from proximal side and take up on their tips the ulnar thumb strings which go to the centre of the figure. Extend, turning palms away from you. Say, "No, him no good *Giti Waondeli*," and release indices again.
- (vii) Insert thumbs into little finger loops from proximal side and take up radial little finger strings.
- (viii) Grip the three ulnar thumb strings between thumb and base of index. Insert indices into thumb loops from proximal side and take up on their tips the ulnar thumb strings which go to the centre of the figure. Extend, turning palms away from you.

The figure is a representation of a rock in the island of Lifu, which is regarded as the special habitation of the "devil" Waondeli. It is of the emerged madreporic formation of which the island is composed, and is crowned by a number of vertical projections and pinnacles. My instructor showed considerable hesitation at first in giving the correct name of the figure, calling it simply "a mountain." As there are no mountains in Lifu, and as the figure does not resemble any ordinary mountain, I inquired further and elicited the name under which I have described the figure.

The making of an incorrect figure in paragraph (vi) was repeated each time the construction was shown to me, and appears to be a traditional part of the process.

The "Rock of Waondeli" is of interest as being a member of the very small class of Cat's Cradles which represent natural physical features of scenery; to which belong, for instance, the "Batoka Gorge," collected by Dr. Haddon (1906) at the Zambezi Falls (quoted by Miss Haddon, 1911, p. 40), and "The Outline of the Island of Davane in the Torres Straits," collected by Landtman (1914, p. 224) from the Kiwai people of British New Guinea.

IX. *A Star*.

This figure was taught me by a native of Lifu under the name of *Watasith* (= a star).

- (i) Opening A.
- (ii) Pass thumbs distal to index loops and take up from proximal side radial little finger strings.
- (iii) With indices take up from proximal side proximal ulnar thumb strings. Release thumbs.
- (iv) Pass thumbs distal to proximal radial index string and proximal to proximal ulnar index string; take up from proximal side radial little finger string and return. Release little fingers.
- (v) With little fingers hook down distal ulnar index string against palms; pass middle and ring fingers proximal to the other index strings and seize between them ulnar thumb string; return, transferring this string to the little fingers again brought erect. Release thumbs.
- (vi) Pass thumbs distal to proximal radial index string, take up on their backs the two ulnar index strings and return, keeping them in their original position. Navaho thumbs. Release distal index loops.
- (vii) Pass thumbs distal to index loops and take up from proximal side radial little finger string.
- (viii) With tips of indices take up from proximal side proximal ulnar thumb string. Extend by gripping together thumbs and bases of indices and turning palms away from you (i.e., Caroline Islands extension).

This figure shows a certain resemblance to that known as "Many Stars," collected by Dr. Haddon (1903) from a Navaho Indian source (quoted by Miss Haddon, 1911, p. 50). There are even points of similarity in construction, and the objects depicted differ merely by being in the singular and in the plural respectively. There is a striking coincidence, if it be nothing more, and it is emphasized by the fact that (apart from the "Caroline Islands extension") I have been unable to find in the literature any Melanesian string figure which more closely resembles the Lifu "Star" than does the Navaho "Many Stars."

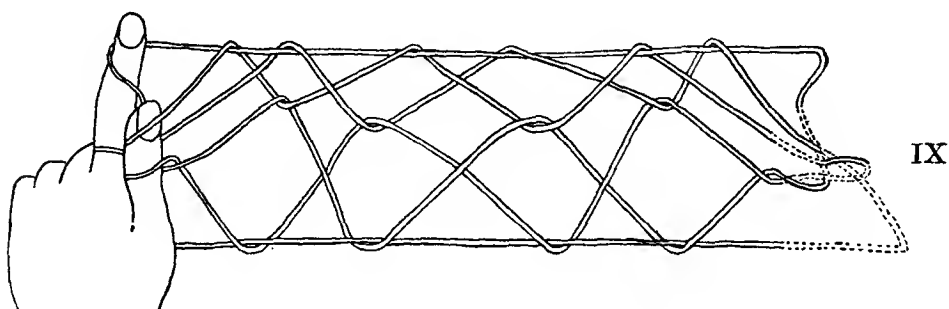


FIG. IX.—A STAR.

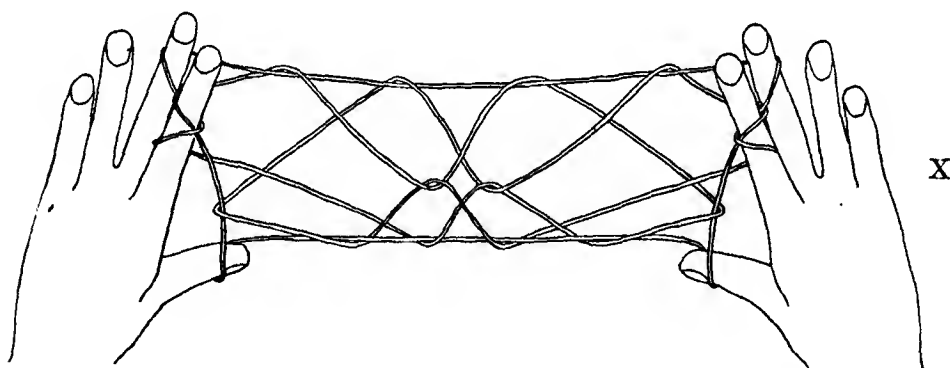


FIG. X.—NAMELESS.

X. *Nameless.*

Learnt at Hienghène from a New Caledonian woman: she assured me that it had no name, and this was confirmed by two or three bystanders.

- (i) Opening A. Release thumbs.
- (ii) Pass L.H. index distal to all strings and hook up with its tip ulnar little finger string; return, thus forming on index loop. Share this distal L.H. index loop with the R.H. index.
- (iii) Insert thumbs from proximal side into little finger loops, take up on their backs the radial little finger string and return.
- (iv) Insert thumbs from proximal side into distal index loops and take up distal radial index string. Navaho thumbs. Release distal index loops.

- (v) Transfer thumb loops to distal part of indices. With thumbs take up radial little finger string, as in paragraph (iii). With thumbs take up radial index string, as in paragraph (iv). Navaho thumbs.
- (vi) Bend over tips of middle fingers and insert them from distal side into index loops; take up on their backs the proximal radial index string and return. Release little fingers and extend by turning palms away from you.

Mrs. Rishbeth has called my attention to the identity, save for a slight difference in construction, of this attractive figure with the "Ten Men," described from the Caroline Islands by Mrs. Jayne (1906, p. 150). Raymund (1911, p. 47, No. 19) has also figured an identical design from Palau (Caroline Islands), without describing the construction; here it is taken to represent a white betel leaf-sheath used for signalling.

There is also a great similarity (even in the curious extension) to a figure representing a turtle scutum reproduced (though not described) by Roth (1902, Pl. VIII, Fig. 2) from Cape Bedford and Princess Charlotte Bay in North Queensland. The Yoruba (West Africa) figure, known as the "Face Mark of the Town of Owu" (Parkinson, 1906), is of the same general type, though differently constructed, and a similar figure was collected by Mr. A. R. Brown in the Andaman Islands. (See Miss Haddon, 1911, p. 37.)

The opening, as far as the end of paragraph (iv), is practically identical with that in Fig. XIII from Houailou.

XI. *Look!*

I learnt this figure from a New Caledonian woman at Hienghène. The name applied to it was *Nen*, which has several significations according to intonation. In addition to "Look!" it may mean "Clouds," "The Bush," or "A Fly." I have chosen the only meaning which seems appropriate.

- (i) Take a short length of the string between the two hands, and make a small loop in it by passing the R.H. away from you and towards the L.H. Insert indices, pointing downwards, into this small loop, and turn them up towards you through the large loop. On extending there should be two parallel strings on the radial side of the indices and two crossing strings on the ulnar side.
- (ii) Insert all the R.H. fingers (but not the thumb) into the two R.H. index loops from proximal side. Insert whole L.H. from proximal side into proximal L.H. index loop, thus making it a wrist loop; and the L.H. fingers (but not the thumb) from the proximal side into the L.H. distal index loop. Turn palms away from you.

(The succeeding movements must be done with the greatest possible rapidity, in order to produce the right effect.)

- (iii) Rotate both hands downwards away from you and upwards towards you ; in so doing keep the R.H. thumb clear of the strings, twisting both R.H. finger loops, and twist the L.H. distal loop only, leaving the wrist loop untwisted. Perform this rotating movement twice, and then turn palms towards you, thus making the radial index strings of each hand cross the palmar surface of the fingers.
- (iv) Close down the fingers of each hand over their palmar strings, with the exception of the L.H. index, which keep erect with the string on its back at the extreme tip. Raise L.H. ulnar index string a little on the L.H. thumb-tip. Extend by bringing R.H. close to left shoulder, keeping the figure taut.

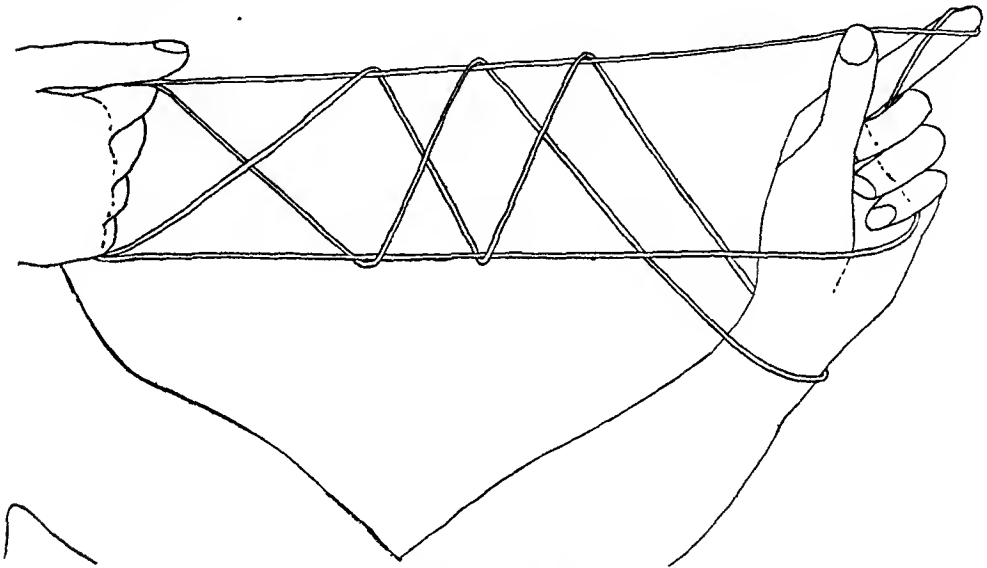


FIG. XI.—LOOK !

- (v) The figure thus produced is displayed for an instant only, then immediately unmade by letting go with the L.H. thumb and rotating the hands twice in the reverse direction. It is again made as before, unmade, remade, *ad inf.*

The idea is to dazzle the spectator by the rapidity of the rotating movements and the suddenness with which the complete figure is presented to and removed from his sight.

XII. *A Pair of Nameless Figures.*

The two figures here described were taught me by New Caledonian girls at Houailou. From them, however, I could learn no name, and I cannot suggest a plausible interpretation. The figures were shown me one after the other and were clearly meant to contrast with each other, the middle section of the constructions (paragraph (iii)) alone being different. For convenience the alternative constructions are printed in parallel columns.

- (i) Opening as in paragraph (i) of Fig. XI (p. 219).
- (ii) Keeping the index loops in their relative positions, with little fingers take up from proximal side the two ulnar index strings.
- (iii) Pass thumbs distal to proximal radial index string, take up from proximal side the two palmar strings and return.

- (iii) Pass thumbs distal to proximal radial index string, take up from proximal side proximal palmar string and return. Pass thumbs distal to distal radial index string, take up from proximal side distal palmar string and return.

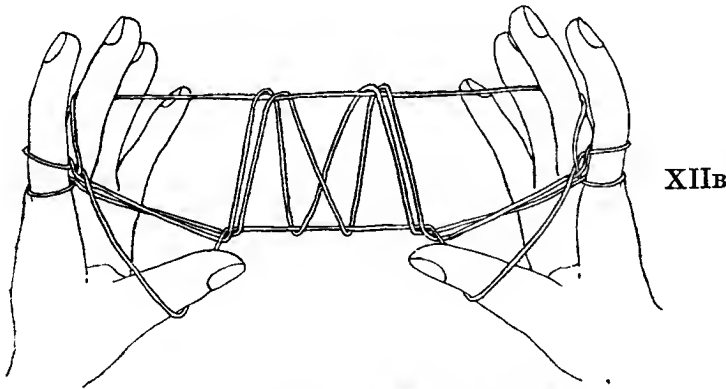
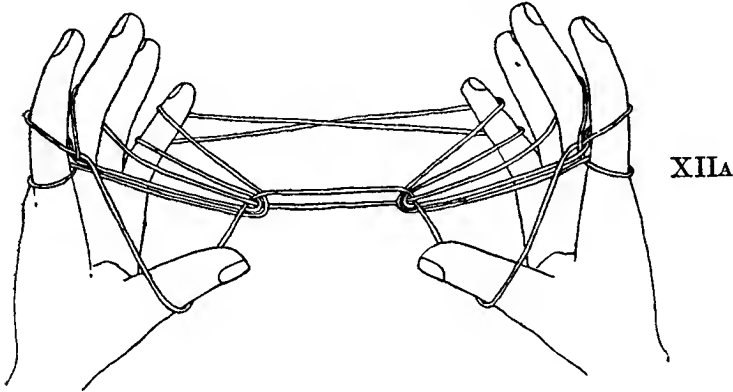


FIG. XII.—A PAIR OF NAMELESS FIGURES.

- (iv) Double middle fingers over distal radial index string and insert them from distal side into thumb loops close to palm; with their backs take up proximal radial index string. Release thumbs but do not draw tight.
- (v) Pass thumbs distal to the released double loops, and take up from proximal side the string which passes from radial side of index across the palmar surface of fingers, at the point where it crosses middle finger. Pull tight.

(vi) Release little fingers, pulling hard with the others and spreading out thumbs.

A double loop comes loose and swings in and out among the other strings.

Fig. XIIA represents the figure reached at the end of paragraph (v).

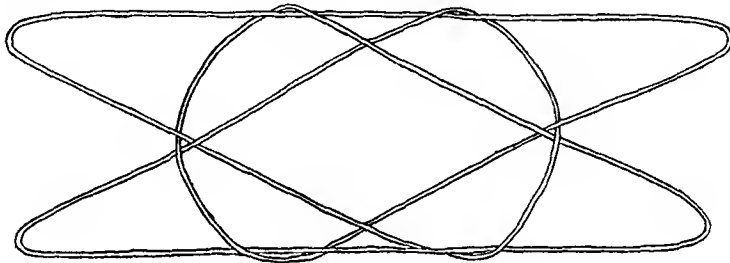
A network figure is the result.

Fig. XII B represents the final at the end of paragraph (vi).

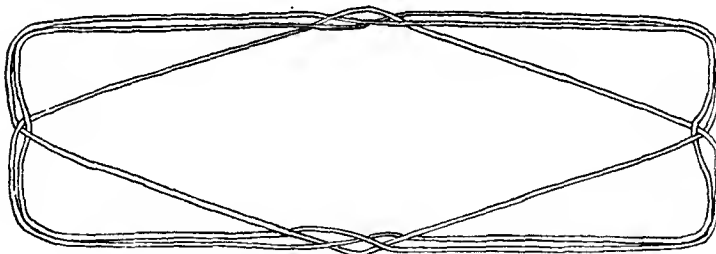
XIII. *Nameless (for two Players).*

Learnt from New Caledonian girls at Houailou.

- (i) Opening A. Drop thumb loops.
- (ii) Pass R.H. index distal to the strings and with it hook up the ulnar little finger string; return, thus producing a twisted distal index loop. Insert L.H. index into this loop from proximal side, thus making it common to both indices.



XIII A



XIII B

FIG. XIII.—NAMELESS (FOR TWO PLAYERS).

- (iii) Pass thumbs proximal to index loops and into little finger loops from proximal side; return with radial little finger strings.
- (iv) Insert thumbs from proximal side into distal index loops and take up distal radial index string. Navaho thumbs (assisting process with lips). Release distal index loops.
- (v) Release little finger loops and extend gently in a horizontal plane.
- (vi) The *second player* inserts the thumb and index of each hand from the distal side into the corresponding loops of the figure on the first player's hands (avoiding the twist of the index loops). He then turns thumbs and indices upwards into the central space, lifting the figure off the first player's hands, and extends horizontally.

- (vii) The *first player* then takes the figure off the second player's hands again by the same method, thus reproducing the design which he first constructed, and this process is repeated over and over again indefinitely.

The opening, as far as the end of paragraph (iv), is practically identical with that of the nameless Fig. X from Hienghène. The figure produced at the end of paragraph (v) is the inverse of that produced in Fig. VII, "The Butterfly," at the end of paragraph (vi).

There is an obvious resemblance between the figure produced at the end of paragraph (v) and the "Moon" from Central Africa (collected by Dr. Cunningham, 1906), and a similar pattern is arrived at in a variety of ways in widely separated parts of the globe (see Miss Haddon, 1911, p. 31). Roth (1902, Pl. X, Fig. 1) figures it from Cape Bedford in North Queensland as "The Sun Clouded Over." Dr. Haddon found it in the Torres Straits in 1888, and Mr. A. R. Brown met with it in the Andaman Islands (*vide* Miss Haddon, *loc. cit.*). Dr. Furness collected it as a stage in the construction of "Stone Money" in the Caroline Islands (quoted by Mrs. Jayne, 1906, p. 161), and it has been figured from Palau, in the same archipelago, by Raymund (1911, p. 55, No. 67 b) as a representation of a stone on which the Chief Sachoas is wont to lean.

Widely distributed as this first stage is, Miss Haddon states that "the continuation which forms 'The Moon Gone Dark' does not seem to occur elsewhere" than in Central Africa. It is therefore of special interest to observe that the New Caledonian figure just described is an almost exact parallel, in both its stages, with the Central African figure and its continuation. There are, however, minor differences in the completed figures, the methods of construction are different, and the two stages corresponding to the "Moon" and "The Moon Gone Dark" are in New Caledonia divided between two players.

XIV. *The Sugar Cane.*

Learnt from a New Caledonian woman at Hienghène. The appropriateness of its name—my instructress gave it in French, *canne à sucre*—is not obvious, and was not explained.

(The figures are best produced by using a rather shorter string than usual, say 2×36 inches long.)

(i) Opening A.

- (ii) Pass thumbs proximal to index loops and insert them into little finger loops from proximal side; turn them away from you downwards and then towards you and up again, thus taking up ulnar little finger string. Release little fingers.

- (iii) Insert all fingers from proximal side into index loops, and close all except the indices over the radial index string. Insert indices from distal side

into thumb loops and turn them up away from you, taking up the two ulnar thumb strings and allowing the dorsal string to slip over them. Release little fingers and extend horizontally. (Fig. XIVA.)

(iv) Insert little fingers from proximal side into the central diamond-shaped area; with each little finger hook down the corresponding oblique string which bounds the diamond on the radial side (*i.e.*, the side towards you). Now bring the little fingers radial to the radial thumb string which goes straight across, and insert them from the distal side into the central space. Release thumbs and extend vertically. (Fig. XIVB.)

(v) Take up on thumbs from proximal side the radial index string which goes straight across. Release indices and extend vertically. (Fig. XIVC.)

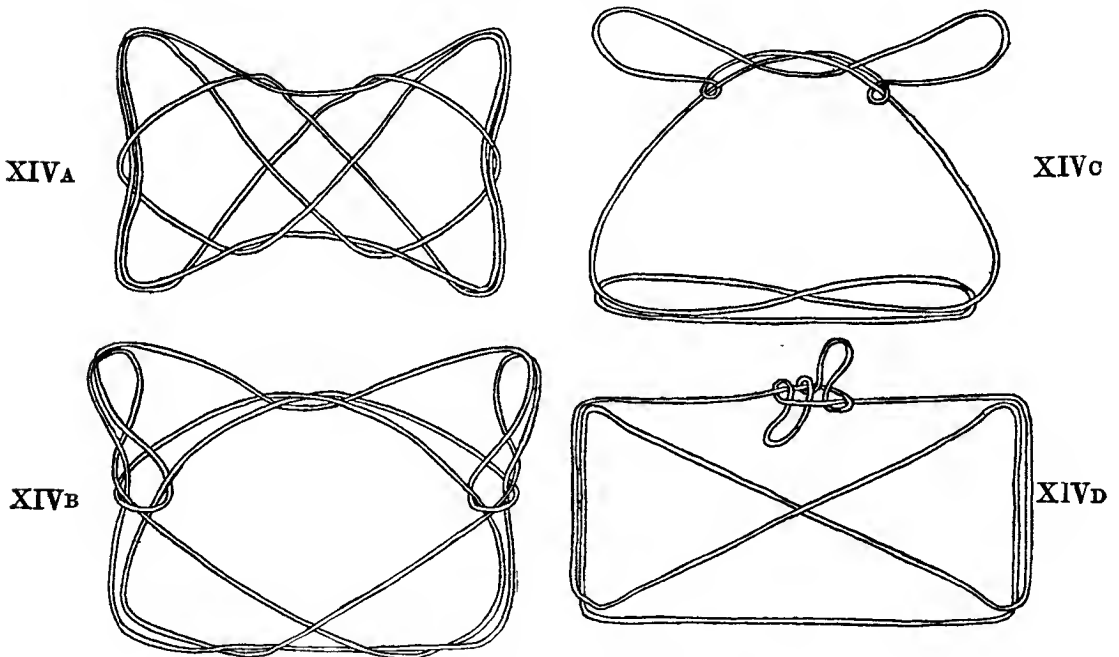


FIG. XIV.—THE SUGAR CANE.

(vi) Share little finger loops with indices. Release thumbs and extend. The loops swing free and remain suspended in a central knot. (Fig. XIVD.)

Mrs. Rishbeth informs me that she collected a similar figure-series in British New Guinea (not yet published).

XV. *The Sardines.*

Learnt from a native of Lifu. On my inquiring "Pourquoi him s'appelle Sardine?" he replied, "Parce que him got a plenty." The Lifu name¹ for the figure is *Wene oué*.

¹ See Appendix II.

(Use a very long string.)

- (i) Opening as in Fig. IV, paragraph (i) (p. 211).
- (ii) Insert little fingers from distal side into index loops and take them up on little fingers, releasing indices and bringing digits erect.
- (iii) With thumbs take up radial little finger strings from proximal side. With index tips take up ulnar thumb string from proximal side. Caroline Islands extension. (No sardine.)
- (iv) Release thumbs.
- (v) Pass thumbs proximal to all strings and ulnar to little finger loops, and then insert them from proximal side into index loops. Rotate thumbs away

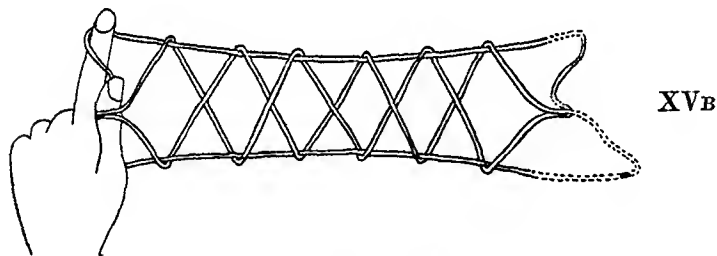
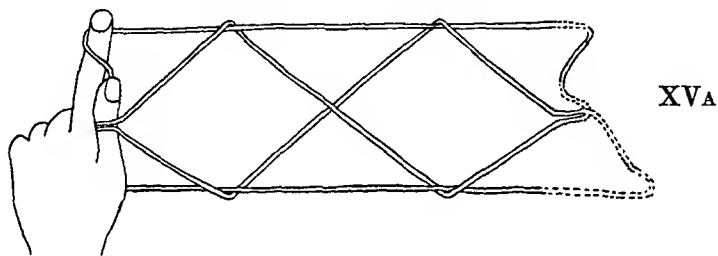


FIG. XV.—THE SARDINES.

from you over ulnar index string, downwards, towards you, and then up again, thus taking up ulnar index string. Release indices.

- (vi) With thumbs take up radial little finger strings from proximal side. With index tips take up ulnar thumb strings from proximal side. Caroline Islands extension. (Two sardines—represented by the two diamonds.)
- (vii) Repeat paragraphs (iv) to (vi) inclusive, again and again until the string is used up. The number of diamonds, *i.e.* sardines, increases by two at each repetition.

The four-sardines stage is almost identical with the New Caledonian “Bracelets,” though made differently (see Fig. IV, p. 211). The above Fig. XVB represents the six-sardines stage.

The two-sardines stage is very similar to the "Fish-Hawk," collected by Roth (1902, Pl. XI, Fig. 4) at Princess Charlotte Bay, North Queensland; and the four-sardines stage is virtually identical with another figure from the same Australian locality (Roth, 1902, Pl. VIII, Fig. 2), which, curiously enough, is considered to represent four shrimps.

XVI. *A Bird's Nest.*

Learnt from a New Caledonian woman at Hienghène; native name *Moiap* (= a bird's nest).

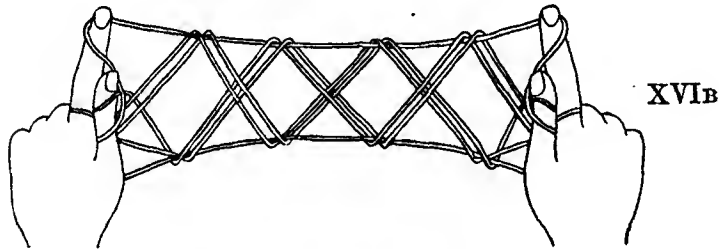
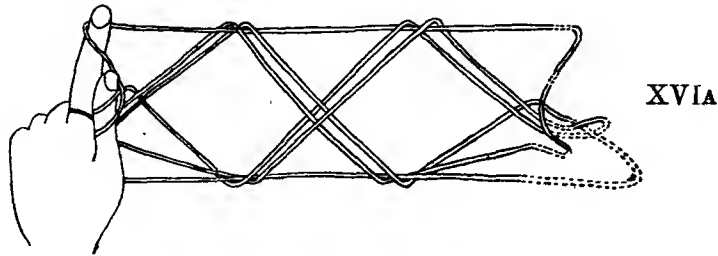


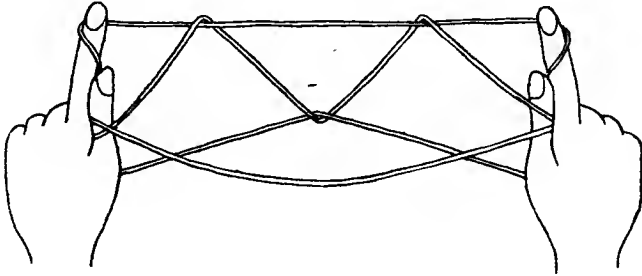
FIG XVI.—A BIRD'S NEST.

- (i) Opening A.
- (ii) Rotate R.H. away from you through a complete circle. Lift R.H. index loop off finger, bring back R.H. to its original position, and replace index loop in the same sense. Do the same with the L.H.
- (iii) Pass thumbs distal to index loops and take up from proximal side radial little finger string. Pass indices distal to distal radial thumb string and into proximal thumb loop from distal side; return, taking up proximal radial thumb string on their tips. Extend by turning palms away from you.
- (iv) Release strings just taken up by thumbs and indices in paragraph (iii). Repeat construction in paragraphs (ii) and (iii).
- (v) Again release strings just taken up by thumbs and indices. Release index loops but do not extend. Repeat paragraph (iv). The whole figure now pulls out.

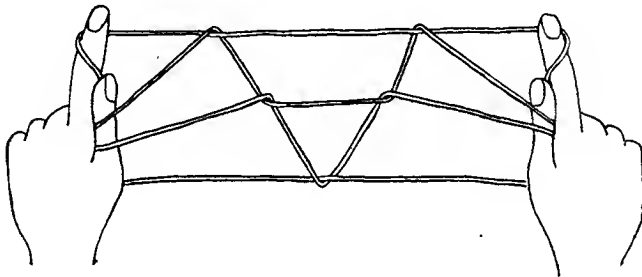
The series of figures seems to be intended to represent the gradual construction of a bird's nest and its sudden destruction.

XVII. *Ouleoulé and the Bird-lime*.

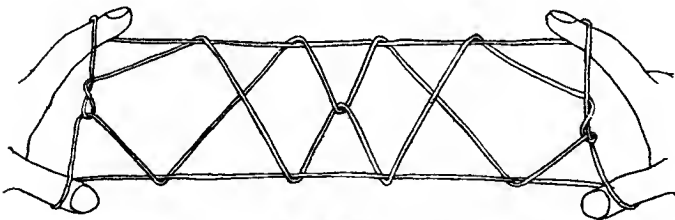
Learnt from a native of Lifu. The native name¹ is *Ati itra peletrei Ouleoulé*. (*Ati* = puts up ; *itra peletrei* = bird-lime ; *Ouleoulé* is the traditional comic character mentioned in connection with Fig. XXII, *q.v.*, p. 233.)



XVIIa



XVIIb



XVIIc

FIG. XVII.—OULEOULÉ AND THE BIRD-LIME.

- (i) String on thumbs.
- (ii) Pass R.H. little finger distal to radial thumb string and insert it from proximal side into thumb loop ; return, thus taking up radial thumb string.
- (iii) With L.H. little finger take up from proximal side R.H. palmar string.
- (iv) With thumbs take up from proximal side radial little finger strings, keeping them a little distal.
- (v) On tips of indices take up from proximal side radial little finger strings. Caroline Islands extension. The result is a loose figure with a slack hanging string which represents the bird-lime. (Fig. XVIIa.)

¹ See Appendix II.

- (vi) Someone now comes and says to Ouleoulé “*Atè jê ekoho*,” i.e., “Put it on top.” Lift the slack hanging string off thumbs (i.e., Navaho thumbs). Close thumb and index of each hand together, tip to tip, and thus transfer index loops to thumbs, keeping them a little distal.
- (vii) Take up ulnar thumb string on index tips. Caroline Islands extension. The “bird-lime” is now on top of a triangular figure which represents a tree. (Fig. XVIIb.)
- (viii) Navaho thumbs. Release little fingers. Spread wide thumbs and indices, and extend by turning their tips inwards and then away from you. The four diamond-shaped meshes in the resulting figure represent the four *pum* (= large pigeons) which Ouleoulé caught. (Fig. XVIIc.)

The two last stages recall (though differing considerably from) an Atherton (North Queensland) pair of figures representing a *Zamia* tree and the nuts (Roth, 1902, Pl. IX, Figs. 2 and 3). In the absence of the method of construction of these figures this resemblance, however, goes for little. There is also some similarity with another North Queensland (Cape Bedford) figure reproduced by Roth (1902, Pl. IV, Fig. 1) under the name of the “Bandicoot.”

XVIII. *The Looper Caterpillar.*

I learnt this figure from New Caledonian women at Hienghène, under the name of *Madîn*. It was also known to a native of Lifu, who called it *Inyi*. Both names signify a caterpillar.

- (i) Position 1.
- (ii) Wrap radial thumb string once round L.H. thumb; insert R.H. index from proximal side into the ring thus formed on the palmar face of the L.H. thumb, and extend.
- (iii) With L.H. index take up from proximal side, through R.H. index loop, the R.H. palmar string (as in Opening A).
- (iv) With R.H. index take up from proximal side, through L.H. index loop, the L.H. palmar string, keeping it distal to the loop already on R.H. index.
- (v) Remove L.H. from strings, and clasp digits of R.H. over them to hold them securely.
- (vi) Pull out the two loops on dorsal side of R.H. index two or three inches, and without twisting them thread the proximal loop through the distal. Now approaching these loops from the dorsal side of R.H., insert L.H. little finger basipetally¹ into the proximal (i.e., the former distal) loop, and the L.H. thumb acropetally¹ into the distal (i.e., the former proximal) loop. Extend, releasing grasp of R.H. digits, and removing the two L.H. loops from the R.H. index.

¹ Basipetally = pointing towards the base; acropetally = pointing towards the apex.

- (vii) Reverse direction of thumb loops by transferring them to indices and then taking them up again on thumbs from distal side.
- (viii) With thumbs take up from proximal side radial little finger string. With index tips take up from proximal side ulnar thumb string (*not* the palmar string). Caroline Islands extension.
- (ix) The “caterpillar,” represented by the loops parallel with the hands, can be made to “loop” on the player’s thigh like a geometrid by alternately approaching and separating wrists while keeping the strings taut.

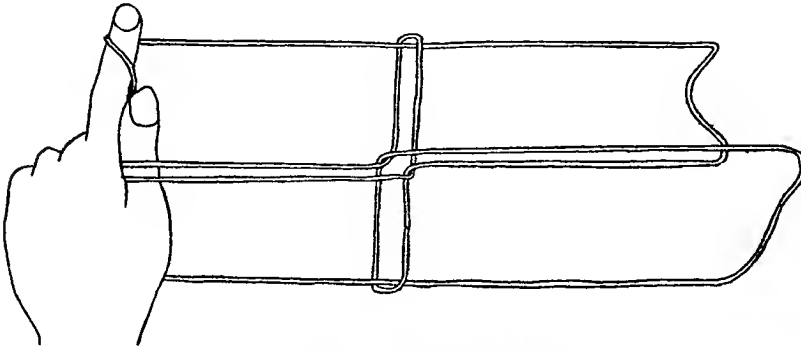


FIG. XVIII.—THE LOOPER CATERPILLAR.

This figure is almost identical with the “Giant Crane” from Tully River in North Queensland, as recorded by Roth (1902, Pl. V, Fig. 5), who, however, gives no construction and mentions no movement. It is identical with a figure collected by Raymund (1911, Pl. VI, Fig. 1) in Palau (Caroline Islands), representing Dirruét (a woman’s name) carrying a heavy mat on her head. Raymund describes no construction, but mentions (p. 54) a movement of the indices which makes Dirruét scratch her head.

Mrs. Rishbeth tells me that she found a similar figure in British New Guinea, which so far has not been published.

XIX. *Porker*.

I learnt the following highly original and complicated figure from a man of Lifu. I also found that it was known to an Uvea man whom I met at Hienghène. The name “Porker” is the *bêche-de-mer* term for a pig.

- (i) Opening as in Fig. XI, paragraph (i).
- (ii) Pass thumbs distal to proximal radial index string and take up from proximal side proximal ulnar index string.

- (iii) Pass thumbs distal to distal radial index string and take up from proximal side distal ulnar index string.
- (iv) Pass little fingers distal to distal radial index string and take up from proximal side proximal radial index string.
- (v) Insert indices from distal side into the triangles on palmar face of little fingers ; turn the tips of the indices towards you and upwards, taking on them the prolongations of the distal radial index strings. Release thumb loops. There is now a double **W**-shaped figure between the hands.
- (vi) With backs of thumbs take up arms of the **W** ; release index strings (three loops from each index) and extend. Pass indices into thumb loops from proximal side and take up the ulnar thumb string (not the palmar string).
- (vii) Let the continuation of this string slip off thumbs. Pass thumbs proximal to index loops, distal to ulnar little finger strings and return proximal to the whole figure. (This causes the palmar strings to become the radial little finger strings.)
- (viii) Pass R.H. thumb and index from distal side through L.H. index loop ; lift loop off L.H. thumb, bring it up through L.H. index loop and replace it in the same sense on L.H. thumb. Do the same with L.H. little finger loop. Take loop off L.H. index and put it over whole L.H. (Say "Down she go.") Repeat with the corresponding R.H. loops. There are now loops on each wrist, thumb and little finger.
- (ix) With thumb and index of R.H. seize L.H. ulnar thumb string and L.H. radial little finger string ; remove L.H. from figure. With L.H. thumb and index seize the two strings where they are held in the R.H. thumb and index and let them go from the R.H. With L.H. thumb and index seize also the corresponding two R.H. strings, and remove the R.H. The L.H. thumb and index now grasp four loops, viz., two original thumb loops and two original little finger loops.
- (x) Pass R.H. thumb and little finger between the two original thumb loops, and separating these two digits take up the two loops upon them. Hold the two strings held in the L.H. thumb and index between the R.H. thumb and index, and remove L.H.
- (xi) Pass L.H. thumb and little finger between the two original little finger loops, and separating these two digits, take up the two loops upon them. Extend, pulling tight.

- (xii) Hold R.H. ulnar thumb string and radial little finger string in mouth. Release R.H. Pass R.H. fingers towards you horizontally through the two hanging mouth loops and release mouth.
- (xiii) Now by gently pulling the two upper strings on the R.H. the "Porker" walks towards the right. (Say "Come along, Porker.") By pulling the two under strings the "Porker" walks to the left. (Say "Porker him go.")

Fig. XIXA is a ground plan of the completed figure, laid flat and seen from above. Fig. XIXB is a side view, in which, for the sake of clearness, certain strings in the central bunch have been omitted.

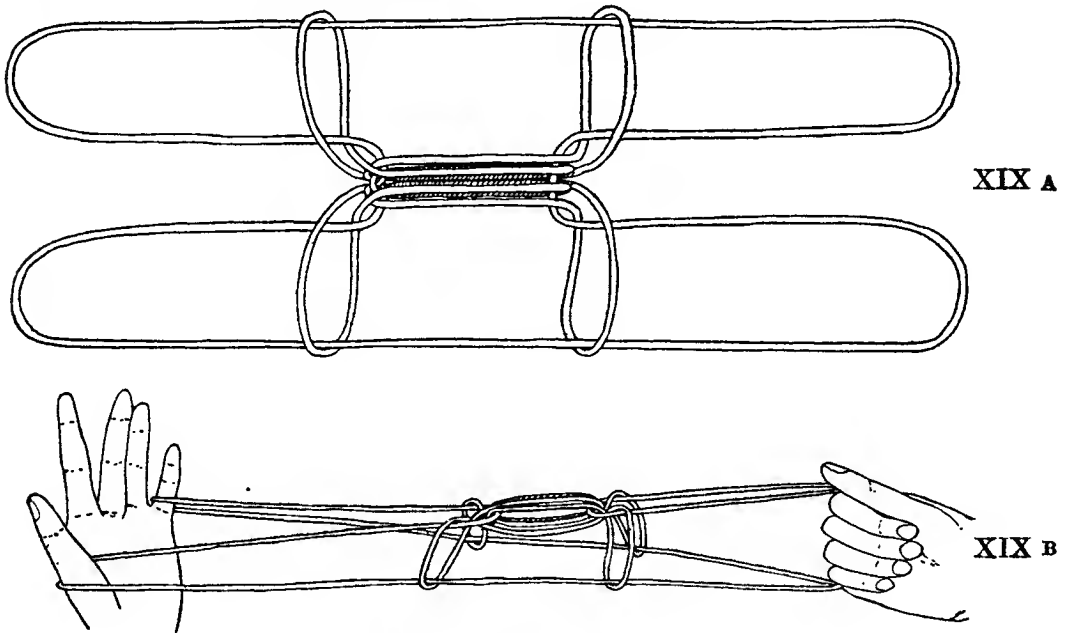


FIG. XIX.—PORKER.

It is to be noticed that the **W** stage in the construction (end of paragraph (v)) is identical with "Little Fishes" collected by Dr. Haddon from Murray Island in the Torres Straits, and is made by the same method. (See Miss Haddon, 1911, p. 12.) There is also a curious and probably coincidental resemblance between this "Little Fishes" figure and "Fighting Lions," collected by Prof. W. M. Davis from Portuguese East Africa. (Miss Haddon, 1911, p. 41.)

Dr. Landtman (1914, p. 224) records a figure played by the Kiwai of the mouth of the Fly River, British New Guinea, which is called "The Outline of the Island of Davâne in the Torres Straits." In constructing this, "Little Fishes" is first made (with a slightly different mode of opening); the construction is then continued just as in making "Porker," as far as the end of paragraph (vi), which completes

the design. We thus have an interesting, and perhaps evolutionary, series of stages:—

1. "Little Fishes" (Murray Island).
2. "Island of Davâne" (Kiwai).
3. "Porker" (Loyalty Islands).

The **W** stage (end of paragraph (v)) or "Little Fishes" is also the foundation of a complicated cycle of six figures played by two persons, occurring in Lifu. I did not succeed in transferring it to paper. It is a game rather than a set of pictures, and each stage has a special name.¹ Thus the first is called *WiatiXa*, a word with no meaning; the second *Xaja llawa* (*Xaja* = to play cat's cradles; *llawa* = put in the hands), etc. An apparently similar "Abnehmespiel" for two players has been figured (but not described as to mode of construction) by Raymund (1911, pp. 42–44) from Palau in the Caroline Islands.

XX. *Lightning.*

A version of this figure was learnt from a New Caledonian woman at Hienghène.

- (i) Begin as in Fig. XIX, paragraphs (i) to (iii) inclusive.
- (ii) Bend middle fingers over distal radial index string and take up from proximal side proximal radial index string.
- (iii) Pass ring fingers distal to ulnar middle finger string and take up from proximal side radial index string.
- (iv) Pass little fingers distal to ulnar ring finger string and take up from proximal side ulnar middle finger string.
- (v) Extend by lifting ulnar ring finger string where it crosses palmar surface of little finger smartly with thumbs, throwing off the double thumb loops.

This is essentially similar to the original figure described by Dr. Haddon (1903) from a North American—Navaho Indians—source. (See Miss Haddon, 1911, p. 51.)

XXI. *A Fly.*

Two versions of this widely distributed string-trick were learnt.

Version 1.—Learnt from a New Caledonian man of the Couliné tribe, near Nakety. It was also known to New Caledonian women at Houailou.

- (i) Position 1. With R.H. index take up L.H. palmar string from proximal side, as in Opening A.
- (ii) Pass L.H. thumb distal to all strings and then proximal to ulnar little finger string; take up on its back from the proximal side the R.H. palmar string and return.
- (iii) Navaho L.H. thumb loops. Release R.H. thumb loop and extend, making a knot in the centre.

¹ See Appendix II.

- (iv) Release R.H. index and L.H. thumb loops, letting them hang from the central knot. (This represents the fly's body and wings.)
- (v) Clap the hands together on the knot (as if to catch the fly), and then separate them sharply, when the knot pulls out (representing the escape of the fly).

Version 2.—Learnt from a New Caledonian at Ngoye, who, however, did not perform the "catching" hand-clap, though on my doing so he imitated me. It was also known, with the catch, to a New Caledonian man at Hienghène, and to the Couliné native who taught me *Version 1*. A Lifu (Loyalty Islands) boy also knew the trick, but gave a different interpretation of it to the usual entomological one. To him it represented an unskilful person trying to crack a coco-nut. Before the thumb loops are dropped the hands are clapped together and drawn apart several times, this representing unsuccessful attempts to break the nut. The thumb loops are then released, the hands clapped on the knot once again and separated, when the figure pulls out, this representing the successful blow of a skilful person.

- (i) String loops on little fingers. Take up double strings from proximal side on backs of thumbs.
- (ii) With R.H. index take up the two L.H. palmar strings from proximal side, as in Opening A.
- (iii) With L.H. thumb take up the two R.H. palmar strings from proximal side and outside (*i.e.*, ulnar to) R.H. index loops.
- (iv) Navaho the two proximal L.H. thumb loops over the two distal. Release R.H. thumb loops and extend, forming a central knot.
- (v) Release R.H. index and L.H. thumb loops, letting them hang loosely. Clap hands on knot and extend, as in *Version 1*.

This figure or trick is essentially similar, though made by a different, if analogous, process, to the "Locust" from Uganda, collected by D. Cunningham (1906). (See Miss Haddon, 1911, p. 28.) It is also closely similar to Dr. Landtman's Kiwai Papuan figure known as the "Bumble Bee" (1914, p. 223) and to Lutz's "Fly" from British Guiana (1912, p. 13). It thus appears to be an almost cosmopolitan figure; and the general identification of it with an insect, whether fly, locust or bee, is very remarkable.

XXII. *Uprooting Maniania*.

A Lifu man showed me a string trick identical with that known as the "Mouse" in Murray Island (Torres Straits), and of very wide distribution over the globe. It is described by Miss Haddon (1911, p. 80), who gives the distribution—Torres Straits, several tribes of North American Indians, African Batua Pygmies, Philippine Negritos, Linao Moros, Yoruba of West Africa, Alaskan Eskimo, Japan.

As performed in Lifu¹ it is said to have the name *Fek alou* (*Fek* = pull up; *alou* = the maniania root, *Pachyrrhizus montanus*), and the following story is attached.

¹ See Appendix II.

The figure on the left hand represents the maniania root, which is very firmly fixed in the soil; the prolongation of the palmar string is the aerial shoot. A big muscular man, named Walelimé, catches hold of the shoot and tugs away, the onlookers say "*Fek alou, fek alou. . .*" The root, however, resists all his efforts to pull it out of the ground. Presently another man, whose name is Ouleoulé, comes along; he is small and feeble-looking, his nose runs, he has a scalp disease, and his body is covered with ulcers. He takes hold of the shoot (here the thumb loop is released) and pulls, and to the astonishment of the beholders the root comes up quite easily.

Walelimé and Ouleoulé are apparently popular characters in the Lifu children's traditional stories and games. The comic figure, Ouleoulé, also appears in the "Bird-lime" Cat's Cradle, Fig. XVII, p. 227.

XXIII. *Putting on the Basket.*

The "hanging" trick collected by Dr. Cunningham (1906, p. 124) in Central Africa, and described by Miss Haddon (1911, p. 86, *q.v.*), was shown me by a native of Lifu under the name¹ of *Feni watreng* (*Feni* = put on; *watreng* = a coco-nut-leaf basket which is carried on the back). The construction represents the putting of the basket over the shoulders; the pulling-out part of the trick shows the basket falling to pieces.

XXIV. *Nameless.*

This trick was taught me by New Caledonian girls at Houailou. They knew no French nor English, and I was therefore unable to learn the name or significance.

- (i) String wrapped once round big toe and held in L.H.
- (ii) With R.H. index hook up the dorsal toe string, and pull it out a little way. Seize and bring through the loop thus formed the two strings held by the L.H., letting the loop slip off.
- (iii) Pass R.H. thumb and index through the two loops just picked up, and with them again seize and draw out the strings held by the L.H.
- (iv) Repeat this "crochet stitch" again and again until string is exhausted.
- (v) Someone else then claps the hands, whereupon the player releases the last "stitch" held by the R.H. and pulls with his L.H., which causes the whole chain to pull out.

This trick is similar to the well-known "Flight of Birds," and clearly represents some animal running away when startled by the hand-clap.

XXV. *A Lifu Trick.*

Learnt from a native of Lifu. No name is borne by this trick.

- (i) String over neck and big toe.
- (ii) With R.H. give the R.H. string another turn round the toe.

¹ See Appendix II.

- (iii) Pass R.H. index from distal side to the left of L.H. string, under it (*i.e.*, between it and the body), and then over R.H. string; turn the index tip away from you into the space on the dorsal side of the toe, and apply the tip to the tip of the toe.
- (iv) Raise the head and let the string slip off the plantar surface of the toe; it then comes free of the finger as well.

APPENDIX I.

In some cases I performed Cat's Cradles from my own repertory before the natives, being careful to construct them rapidly, and only once, in order to avoid introducing alien figures. My object in doing this was to ascertain the presence or absence of certain figures in New Caledonia, in addition to those which the natives had taught me.

The Lifu boy from whom I learnt many figures was unacquainted with the "Well" (Lifu and Torres Straits), the "Crab" (Torres Straits), and "Many Stars" (Navaho Indian).

A Couliné man knew the "Lizard" (Torres Straits and Caroline Islands) trick, but without giving it a name.

The New Caledonian women at Houailou knew "Throwing the Fish-Spear" (Torres Straits), but they only "threw" once, not taking up the dropped loop and throwing again. "Many Stars" was new to them, though they had a somewhat similar figure which I did not learn. They did not know the "Crab," nor the "Fly on the Nose" (Torres Straits, E. Africa), nor the "Hanging" trick (Central Africa, Lifu) nor the "Pawnee" trick.

(For the constructions of the above-mentioned figures see Miss Haddon, 1911, *passim*.)

APPENDIX II.

The Lifu natives use a method of writing their own language in capital letters which was devised and taught them by Mr. Hadfield, the English missionary in the island. Ordinary Roman capitals are used as far as possible, with the addition of one or two Greek characters to represent sounds unknown in English. For instance the Greek χ is used for a guttural sound quite unfamiliar to me and unrepresentable in Roman letters. The sound of our R does not occur in Lifu speech, and the consonants TR are used to represent a dental sound something like a sharpened T made at the extreme front of the incisors. Accents are used to modify the vowel sounds; thus the \acute{E} with two accents is used for a very short and scarcely voiced E sound.

I have adopted this script in the names given to the Cat's Cradles which I learnt from Upiko, the admirable Lifu boy who accompanied me throughout my travels in New Caledonia and the Isle of Pines.

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NUDITY IN INDIA IN CUSTOM AND RITUAL.

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THE costume of the people of India, like that of all residents in tropical countries, is generally scanty ; but they cannot be described as a naked people, or careless of personal modesty. On the contrary, in Northern India at least, they are careful to cover those parts of the person which it is indecent to expose. Anyone who has seen women, covered with a single sheet, come dripping out of the water at a bathing festival, will remark the care and dexterity with which they change their wet clothing. Little children, it is true, up to the age of four or five years may be seen nude, and any attempt to cover the person, by a bead or some other amulet hung from the waist, or, in the case of girls by wearing a kind of fig-leaf, often made of silver, is intended as a prophylactic rather than as a concession to public opinion.

There are, or were in recent times, certain tribes among whom the habit of absolute nudity prevailed ; but the number of such instances is rapidly disappearing among the more primitive races as they gradually come under the influence of Hinduism. The case of the Juāngs of Chotā Nāgpur is familiar from the description and photographs of them given by Colonel E. T. Dalton.¹ The Semas of Assam are practically naked, as the small flap worn hanging from their waists cannot be said to hide their nakedness, and the same is the case among some Bhīls of Gujarāt.² Nudity, or semi-nudity, is more common among some of the wilder tribes of the South. Some of the Porojās or Parjās of the Vizagapatam and Ganjam Districts on the East Coast wear a loin-cloth of fibre, so scanty that they are obliged to sit on their heels, for decency's sake, instead of squatting in the usual position.³ The Yānādīs are almost nude, carrying palm-leaf baskets dangling from their waists, in which they collect forest bulbs, dead rats or snakes, which they eat.⁴ The Chenchūs accentuate their nudity by wearing a narrow bark thread round the waist to hold their arrows and a knife.⁵ Both the Kādīrs and the Vedāns are said to have gone

¹ *Descriptive Ethnology of Bengal*, 155 *et seq.* The Phyllitæ or "leaf-clad" people described by Ptolemy (vii, 66) have been identified with the Bhīls or Pulindas, while some tribe in the neighbourhood of the Vindhyan range may be identified with the Parna-Savaras, or "leaf-clad" Savaras. *Archæological Survey Reports*, ix, 151 ; xvii, 127 *et seq.*

² *Census Report, Assam*, 1891, i, 246 ; *Bombay Gazetteer*, ix, Part i, 297.

³ E. Thurston, *Castes and Tribes of Southern India*, vi, 219.

⁴ *Ibid.*, vii, 432.

⁵ *Ibid.*, ii, 34.

naked when they were first observed by Europeans.¹ Among the wild tribes of Upper Burma men of the Pa-hlaing Karens were not taxed by the native Government until they began to wear clothing, and, in order to escape taxation, it was the custom for young men to go about mother-naked until at least the age of twenty. In hot weather Wā men and women never wear any clothing, or only on ceremonial occasions; at other seasons they wear a strip of coarse cotton cloth, an absolutely inadequate dress.² Left to themselves, the Andamanese and Nicobarese go stark naked, and do not cover the head.³

The custom which prevails among high castes, like the Nāyars in Southern India, where women wear no covering for the bosom, is startling to a visitor from the North, where all women wear some kind of bodice. It is part of the general etiquette in that part of the country, for a description of which I am indebted to Mr. F. J. Richards: "In the Tamil country, *i.e.*, from the Kaverī valley southward and east of the West Ghāt range, the conventional dress of the upper classes is, first, a loin-cloth (*vēshṭi*, the *dhoti* of the North), and secondly, a body-cloth (*anga-vastiram*). The lower classes commonly wear only the perineal cloth (*komanam*) and a second cloth which they wear only for convenience on the head, round the waist, or across the shoulder. The body-cloth is ordinarily worn across the shoulder and diagonally across the body, but it can be shifted according to convenience or fancy. Officials, Vakīls or lawyers, and others who by official etiquette are required to cover head and body, wear the body-cloth over the coat, and also a turban, generally one 'made up' with a pith basis. Social and religious etiquette in the Tamil country prescribes that head and body down to the waist should remain uncovered in the presence of a superior. Thus, a Brāhman should go 'bare-bodied' when he enters the more sacred precincts of a temple, when he escorts his spiritual guide or Guru, and in the presence of his god or Guru he should wear his body-cloth round his waist. If a cultivator or a cooly sees an official coming towards him, or on entering a Court of Justice, he should take his cloth from off his head or body, if he is so wearing it, and tie it round his waist before entering 'the Presence.' A relic of this practice is no doubt the basis of the etiquette in the presence of H.H. The Mahārājā of Mysore, at whose Darbārs only a few of the highest officials, such as the Dīwān, Councillors, or Judges of the High Court, are permitted to wear the body-cloth across the body and over the shoulder: all others, not so privileged, wear this cloth round the waist. The Tamil practice appears to be a compromise between Malabar custom and Muhammadan etiquette."

In the ancient Tamil period "a full dress appears to have been the outward

¹ E. Thurston, *Castes and Tribes of Southern India*, iii, 12; vii, 332.

² (Sir) J. G. Scott, J. P. Hardiman, *Gazetteer, Upper Burma and the Shan States*, Part i, Vol. i, 545, 510.

³ *Census Reports*, 1901, 56, 198; 1911, 120; *Journ. Roy. Anthropol. Inst.*, vii, 439; xii, 329

sign of a servant rather than of a master ; and the nobles put on only so much clothing as can be worn without inconvenience in a hot climate. In the ordinary dress of the Tamil woman, the shoulders, arms and body down to the waist were entirely bare, the drapery descending from the loins downwards to the ankles. The part of the body which was left uncovered was generally adorned with sandal and other fragrant powders. The Nāga women appear to have been almost naked, like those depicted in the Amarāvati sculptures. The courtesans wore a piece of muslin which covered their body from the waist to the middle of the thigh ; but it was such fine texture that it hardly concealed their person.”¹ In the Mysore ancient bas-reliefs “women are commonly arrayed in nothing more than rows of ornamental chains and jewellery, pendent from the throat and loins—an attire, if such it may be called, worthy of the Age of Innocence ; and becoming enough, it may be, on the golden-olive and nut-brown tints, that hardly reveal a blush, of Nature’s vesture for the fair of these climes.”² Marco Polo writes : “You must know that in all this Province of Maabar there is never a Tailor to cut a coat or stitch it, seeing that everybody goes naked. For decency only they do wear a scrap of cloth ; and so it is with men and women, with rich and poor, aye, and with the King himself, except what I am going to mention. It is a fact that the King goes as bare as the rest, only round his loins he has a piece of fine cloth. . . . The people of the country go to battle all naked, with only a lance and a shield.”³

This Dravidian custom of semi-nudity is found among some of the forest tribes, by whom, in the case of women, it is not considered a mark of indelicacy ; in fact, the Gonds used to forbid their women to wear the little jacket (*choli*). In Bastar, however, women of this tribe are said to be giving up the custom of exposing their bodies above the waist.⁴ Abor and Kandh women leave the part of the body above the waist uncovered.⁵ The Pallan women of Tanjore are said to dress in this way, “a distinctive mark of their primitive condition of slavery, of which, however, no trace now exists” ; but this is certainly a mistake, because the practice is common among the higher castes of South India, except foreigners like the Nambūtīrī Brāhmans.⁶ Another fact pointing in the same direction is that Tiyan women were not allowed to wear anything above the waist, except when under death pollution.⁷

A crisis arose in Travancore in 1858, when riots occurred because Shānān Christian converts gave up the practice of going about without an upper cloth.

¹ V. Kanakasabhai, *The Tamils Eighteen Hundred Years Ago*, 117.

² B. L. Rice, *Mysore*, ed. 1897, i, 215.

³ Marco Polo, ed. Sir H. Yule, 1st ed., ii, 274 *et seq.*, 278.

⁴ R. V. Russell, *Tribes and Castes of the Central Provinces*, iii, 123, 131.

⁵ Dalton, *op. cit.*, 27, 301.

⁶ Thurston, *op. cit.*, v, 474 ; L. K. Anantha Krishna Iyer, *The Cochin Tribes and Castes*, ii, 100.

⁷ *Ibid.*, *op. cit.*, vii, 98.

The matter was settled by the Mahārājā, following the lead of Sir C. Trevelyan, Governor of Madras, by issuing a proclamation which legalized the practice of these converts in maintaining their efforts to encourage modesty in dress.¹

In Northern India, in the carvings on Buddhist Stūpas, women, particularly, it would seem dancers or attendants, are depicted nude above the waist.² But, according to General Maisey, "there is no question as to the nudity of the women in this sculpture; but it is quite a mistake to suppose that nudity is the rule among the female figures at Sānchi. Some who appear, on a cursory glance, to be totally nude, only appear so because the sculptor, like the early Greek artists, represented thin drapery, over the lower limbs, by simple lines. In figures, however, whose attitudes necessitate it, the drapery is fully shown."³

The next stage is the wearing of bark clothing. There does not appear to be any reference to this custom in Vedic literature; but the ancient Hindu ascetics used to dress in this material, and so, according to Strabo, did the Hylobioi, who seem to represent the Vanaprasthas or Hindus in the third, or ascetic, stage of life.⁴ In the Rāmāyana epic Rāma and Sītā in their wanderings through the Vindhyan hills wore raiment of bark; the Pāndavas, exiled to the Himālaya, wore the same clothing, and in the Panjābī tale of the Saiva cult of Mahāsū Deotā, the Brāhman Hūnā throws aside his clothes and dons bark attire.⁵ Bark dresses continued to be worn in mourning at the time of Harsha of Kanauj in the beginning of the seventh century A.D.⁶ Its use has not quite disappeared in modern times. Within the last fifty years the Gadabas of the Central Provinces used to wear a cloth made from the bark of the *Karing* tree, with horizontal bands of yellow, red and blue.⁷ The hill Pandārams of Travancore live in caves and hollow trees, and wear bark clothing.⁸ Porojā or Parjā women in the Vizagapatam and Ganjam Districts on the East Coast wear a scrap of bark or cotton cloth, about a foot square, attached to the waist by a string; they say that they are obliged to wear this clothing, because some of their ancestors jeered at Sītā for wearing this dress, and she cursed them that they should wear nothing else.⁹ The Chinbons of Upper Burma are said to wear bark occasionally, but the majority of them appear to wear nothing.¹⁰

¹ Thurston, vi, 365; V. Nagam Aiya, *State Manual of Travancore*, ii, 222.

² (Sir) A. Cunningham, *The Bhilsa Topes*, Plate xv, 206, 213; *The Stupa of Bharhut*, 33; F. C. Maisey, *Sanchi and its Remains*, 35.

³ Maisey, *op. cit.*, 22.

⁴ Manu, *Laus*, xi, 102, 106; Strabo, xv, 59; J. W. McCrindle, *India as described by Megasthenes and Arrian*, 98, 102; (Sir) A. Cunningham, *The Stupa of Bharhut*, 30.

⁵ R. H. Griffith, *The Ramayana*, ed. 1895, p. 138 f.; E. T. Atkinson, *Gazetteer of the Himalayan Districts of the North-West Provinces*, ii, 281; H. A. Rose, *Glossary of Tribes and Castes of the Punjab and North-West Frontier Province*, i, 405.

⁶ Bana, *Harsa Charitra*, 173.

⁷ C. Grant, *Central Provinces Gazetteer*, 1870, p. 33.

⁸ *Census Report, Travancore*, 1901, i, 353; V. Nagam Aiya, *op. cit.*, ii, 417.

⁹ Thurston, *op. cit.*, vi, 212 *et. seq.*

¹⁰ Scott, Hardiman, *op. cit.*, Part i, Vol. i, 461

Andamanese women are said to wear bark of the *Celtis vestimentaria* tree, but Sir G. Watt does not mention this tree as a source of the clothing.¹ The use of bark clothing among the Veddahs of Ceylon seems to have generally disappeared, but among the Coast branch of the tribe dancers should wear a petticoat made of coco-nut leaves and green twigs of other trees.²

The chief source of bark clothing, *Sterculia guttata*, is found, not in North India, but in the east and west of the southern part of the Peninsula, in Ceylon and the Andaman Islands.³ In the north the use of the bark of the *Betula bhojpattra* for literary purposes dates from ancient times, and it continued to be employed until the manufacture of paper was introduced by Akbar, from whose reign its use for writing purposes was discontinued, and the method of preparing it has been lost.⁴ But birch bark continued to possess some traditional importance, as women in Bengal in the beginning of the nineteenth century used to wear charms written on it when they desired children.⁵

The use of leaves for clothing is more common than that of tree bark, and like that, its employment for this purpose prevails specially in Southern India. Among the Tandu Pulayans of Travancore men now wear the ordinary waist-cloth, but the distinctive name of this section of the tribe is derived from the women's dress, which consists of the leaves of a kind of sedge, cut into lengths a foot long and tied in a bushy tail behind and before. Young girls wear at first a strip of bark from the areca palm; later in life they assume the dress of sedge leaves. Both are said to be going out of use, being replaced by cloth.⁶ In British territory in Madras the Vettuvan women wear only leaves round their waists, and renew them daily; in some cases this dress is so far varied that their double fan-shaped apron of leaves is tied round the waist with a cloth girdle.⁷ Men of the Koragā tribe, who are regarded as foul outcasts, wear a loin-cloth, the women leaves woven together.⁸ When F. Buchanan made his expedition about the year 1800, women of the Korar or Koravā tribe in Mysore stuck a bunch of leaves into a girdle fore and aft. Some of the men had a fragment of cloth round their waists, but few of the women were able to procure this. Those of the same tribe in British territory, who are known as

¹ *Census Report*, 1901, 170.

² C. G. and B. Z. Seligmann, *The Veddahs*, 34, 213, 337.

³ (Sir) G. Watt, *A Dictionary of the Economic Products of India*, vi, Part iii, 363. For methods of making bark cloth, see W. W. Skeat, C. O. Blagden, *The Pagan Races of the Malay Peninsula*, i, 375 *et seq.*

⁴ Watt, *op. cit.*, i, 452 *et seq.*

⁵ W. Ward, *The Hindoos*, 2nd ed., i, 155.

⁶ *Census Report, Travancore*, 1901, i, 341; V. Nagam Aiya, *op. cit.*, ii, 404; E. Thurston, *Ethnographic Notes in Southern India*, 66; W. Logan, *District Manual of Malabar* (i, 148), calls these people Cheruman (see E. Thurston, *Castes and Tribes of Southern India*, ii, 45 *et seqq.*), and mentions their custom of wearing bark.

⁷ Thurston, *Castes and Tribes*, vii, 395 *et seqq.*

⁸ *Ibid.*, iii, 428 *et seq.*

Yerukalās, seem to have adopted the normal Hindu dress.¹ Some leaf-wearing tribes are found in Orissa. The Malhārs wear bunches of green leaves attached to a number of strings round the waist. Not long ago the leaf-wearers in Keunjhar were induced by a British officer to accept cotton clothes; they were marked by him on their foreheads with vermilion as a sign of their admission into civilized society. The women then burned their bunches of leaves, and the men took an oath that they would never allow their women to wear them in future.²

In the Andaman Islands women of the Bojigngiji section wear a bunch of five or six leaves in front; Yerawā women a loose tassel made of strips of various kinds of bark; the Ongī-Jarawās a bunching tassel of fibres, while the Jarawā women are apt to be quite unclothed.³

The use of dress of this kind necessitates the wearing of the girdle, and this emphasizes the importance of it in the evolution of Indian dress. Early accounts of the Māriā section of the Gonds describe their dress as consisting of a girdle of cowry shells or of ten or fifteen cords, attached to which were a tobacco pouch and a naked knife.⁴ According to another account of the tribe in an early account published in 1866, "on the east of Chāndā District the men wear no covering for their head or for the upper part of their bodies, and constantly go about with a battleaxe in their hands. The women deck themselves with thirty or forty strings of beads, to which some add a necklace of pendent bells. Bangles of zinc adorn their wrists, and a chain of the same metal is suspended from the hair and attached to a large boss stuck in her ear. But the greatest peculiarity connected with this costume is the practice which prevails in the more remote districts, of the women wearing no clothes at all; instead of which they fasten, with a string passing round their waists, a bunch of leafy twigs to cover them before and behind."⁵ According to Dalton though the Orāon man wears a loin-cloth he always has round his waist a girdle of cords made of tusser silk or of cane: "This is now a superfluity, but it is no doubt the remnant of a more primitive costume, perhaps the support of the antique fig leaves."⁶ At present the young man's girdle is of twisted cotton thread dyed black, or of the fibre of a creeper, from which keys, a purse, and thorn tweezers are hung, or a bamboo flute is stuck in it.⁷ Chin women in Upper Burma keep the skirt in place by a brass or iron girdle, like the chain of cog-wheel, and from three to four pounds in weight. The men wear a string round the waist from which a strip of cloth hangs down in front and is looped up behind, but in addition they

¹ F. Buchanan, *A Journey from Madras through the Countries of Mysore, Canara and Malabar*. iii, 100; Thurston, *op. cit.*, iii, 501.

² (Sir) W. W. Hunter, *Orissa*, ii, 68, 116 *et seq.*

³ *Census Report*, 1901, p. 50.

⁴ Dalton, *op. cit.*, 279.

⁵ S. Hialop, *Papers relating to the Aboriginal Tribes of the Central Provinces*, 8.

⁶ Dalton, *op. cit.*, 279.

⁷ Sarat Chandra Roy, *The Orāons*, 93.

have a sort of apron, often ornamented with beads or shells, and reaching half-way to the knee, this indicating a progressive development in dress.¹ In the same way, every woman of the Halbā, a cultivating caste in Raipur District of the Central Provinces, must have a thread round her waist, which in the old days probably held up an apron of leaves.² This enables us to understand the importance of the girdle in ancient times, as is shown in the Buddhist sculptures, of which Cunningham gives an account, one name for this article of dress indicating that it was made of the seeds of the *Abrus precatoria*, or Indian wild liquorice, and these were gradually superseded by beads made of the precious metals.³

The semi-nudity of some Ascetic Orders at the present day is familiar to all observers of Indian life; but the ancient practice of ascetics appearing naked in public has been gradually reformed by British law and by the growth of a healthier feeling among Hindus. F. Bernier, writing about the middle of the seventeenth century, states that numbers of the Jauguis, or Jogīs, “are seen day and night seated or lying on ashes, entirely naked: frequently under the large trees near *tālābs*, or tanks of water, or in the galleries round *Deūras*, or idol temples.”⁴ Members of one of the highest Orders, that of the Paramahansās, still go naked.⁵ When Professor Oman visited the great ascetic, Swāmi Bhāskaranandā, he found him sitting naked, and the same rule is followed by other Saiva ascetics—Dandīs, Khākīs, and Nānga Sannyāsīs, and by Vaishnava Bairāgīs.⁶ Some years ago an application was made to the High Court, Bombay, with the object of cancelling an order made by a magistrate prohibiting Saiva Gosāins or Gosvāmīs from walking naked in procession at the sacred city of Nāsik in the Deccan, and it was pleaded that bathing naked had always been allowed at pilgrimages to Hardwār and Allāhābād. This assertion is certainly untrue at the present day. The application was rejected.⁷

The question of the origin of enforced nudity in the various forms of ritual and magic is not free from difficulty. As Dr. E. Sidney Hartland remarks, it may in some cases be based on the belief in the apotropæic powers attributed to the sexual organs.⁸ In many places high caste women or girls in times of drought are in the habit of divesting themselves of their clothing at night and dragging a plough through the fields, men being carefully excluded during the rite.⁹ When rain fails the

¹ Scott, Hardiman, *op. cit.*, Part i, Vol. i, 469; Part ii, Vol. i, 245.

² Russell, *op. cit.*, iii, 199.

³ *Stupa of Bharhut*, 37.

⁴ *Travels in the Mogul Empire*, ed. 1914, p. 316.

⁵ W. Ward, *The Hindoos*, 2nd ed., ii, 375; H. H. Wilson, *Sketch of the Religious Sects of the Hindus*, i, 231 *et seq.*; Jogendra Nath, Bhattacharya, *Hindu Castes and Sects*, 385; J. C. Oman, *Mystics, Ascetics, and Saints of India*, 162.

⁶ Oman, *op. cit.*, 161, 189, 206, 224; Rose, *op. cit.*, ii, 215; iii, 357; Wilson, *op. cit.*, i, 238 *et seq.*

⁷ Oman, *op. cit.*, 269.

⁸ J. Hastings, *Encyclopædia of Religion and Ethics*, ix, 830.

⁹ Sir James Frazer, *The Golden Bough*, 3rd ed., “The Magic Art,” i, 275.

Meitheis of Manipur, headed by their Rājā, strip off all their clothes, and stand cursing each other in the streets of Imphāl, the capital town, while women strip themselves at night and throw their rice-pounders into the river.¹ The popular explanation of such practices is that the custom of high caste women sharing in the ploughing, or of a Rājā violating the common laws of decency, is such a subversion of the existing order of things that Indra or some other rain-god is moved to pity and grants the desired rain. This is clearly an *ex post facto* explanation. The action of water as an agency in causing fertility is a commonplace of folk belief.² In the Panjāb on a Sunday or Tuesday night, or during the Divālī, or feast of lights, a barren woman desiring a child sits on a stool, which is then lowered down a well. After divesting herself of her clothes and bathing, she is drawn up again and performs the *Chauk-pūrnā* ceremony with incantations taught by a wizard. Should there be any difficulty about descending the well, the ceremony is performed beneath a sacred *pīpal* or fig-tree. It is believed that after such a ceremony is performed the well runs dry and the tree withers, the *Mana* of both having been exhausted during the rite.³ In similar cases of rain-magic the girls are clad in leaves to symbolize vegetation. We may suspect that the performers in such rites of rain-magic divest themselves of their clothes in the expectation that the rain will immediately fall and fertilize them, and through them the thirsty vegetation.

As regards the custom of nudity by the religious Orders, it symbolizes death to this world, the renunciation of all family and social rites. In the case of nudity in ritual, of which examples will be given, the case is not so clear. When the Badāwī in the days of heathendom used to make the ceremonial circuit of the Kaaba at Mecca naked, or wearing clothes borrowed from one of the religious communities of the holy city, the explanation is that if the worshipper wore his own clothes, they became *harīm* or taboo through contact with the holy place or function.⁴ This belief does not appear to prevail among the Hindus, and the motives for the disuse of clothes in religious or magical rites seem to be varied: partly, the dread of the pollution which may arise from clothing during the rite; partly, the tradition of purity attaching to the Brāhmans of ancient days, who lived as naked ascetics in the forest. In this connection it may be noted that the Nambūtiri Brāhmans of Malabar, who affect to regulate their lives according to the ancient Vedic rule, are, in the case of men, very sparing in the use of clothing, and do not seem to feel ashamed at being seen walking about almost naked. On the other hand, a Nambūtiri in the ascetic (*vanaprastha*) stage of life should not eat quite naked.⁵

¹ T. C. Hodson, *The Meitheis*, 108.

² E. S. Hartland, *Primitive Paternity*, i, 64 *et seqq.*

³ *Census Report, Panjab*, 1901, i, 164; another version of the rite is recorded in *Panjab Notes and Queries*, iv, 58.

⁴ W. Robertson Smith, *Lectures on the Religion of the Semites*, 2nd ed., 481.

⁵ L. K. Anantha Krishna Iyer, *op. cit.*, ii, 280, 286.

Instances of nudity in magical or religious rites are not uncommon. At the famous ice-cave shrine of Amarnāth, "the undying Lord," a form of Siva, until recent times, pilgrims, men and women, on entering the cave used to strip off their clothing; it was believed that Siva wished them to appear nude and dance before him. The Mahārājā of Kashmīr, however, directed that women were to cover themselves, but only with a single garment. At present the men enter wearing only breech-clouts, but when inside each man divests his neighbour of his cloth, and in the end all stand in the cave stark naked. According to Vigne, some pieces of birch-bark were used as fig-leaves. Dr. Neve states that the worshippers throw themselves naked upon the ice block in the cave which represents Siva.¹ According to Sir Walter Lawrence² the rite is performed at the full moon of the month Sāwan (July—August), when pilgrims worship the snow *lingam*, which gradually melts away after this full moon. "Strict Hindus, both male and female, will discard their clothes and put on shirts of birch-bark before they enter the cave." As regards the nude dance in honour of Siva, a legend current in the Himālaya tells that the wives of the Rishis or deified saints used to dance naked before Siva-Mahādeva.³ A century or so ago votaries of the goddess Sarasvatī, goddess of learning, and of Devī, the mother goddess, in her form as Jagaddhātṛī, "fosterer of the world," used to dance naked in processions at Calcutta.⁴ At the fair held at Devidhāra in Kumaun in the lower Himālaya, the idol used to be dragged to the top of the hill by stark naked men.⁵ It is probably an instance of the taboo supposed to be caused by touching sacred things that, in the case of the Gond deity, Pālo, whose image is made of cloth and used as a covering for the sacred spear-heads, the Katiā or Rāj Pardhān, the tribal priest, who is entrusted with the task of making the image, must live in a separate house, must not approach his wife until the work is finished, and while he is engaged upon it he must remain naked.⁶ Nudity is sometimes enforced in the performance of a vow, as is the case in Gujarāt, when a child is attacked with small-pox the mother vows to prostrate herself naked before the small-pox goddess either from her own house or at a short distance from the temple.⁷

Some of the Jain Orders prescribe nudity for their priests. There are two Orders, the Digambara, "those clad only in the sky," the Svetāmbara, or "white-robed." In the case of the former the images of the Tīrthakaras, or deified saints, have no eyes and wear no loin-cloth, and their priests are confined to monasteries,

¹ F. Drew, *Jummo and Kashmir Territories*, 222; (Sir) W. R. Lawrence, *The Valley of Kashmir*, 41; Oman, *op. cit.*, 268 *et seq.*

² *Op. cit.*, 265 *et seq.*

³ Atkinson, *op. cit.*, ii, 303.

⁴ Ward, *op. cit.*, ii, Introd. xxix, xxxvi, 103, 137. Compare the dancing of David before the Ark, 2 Samuel vi, 14, 20.

⁵ Atkinson, *op. cit.*, ii, 201 *et seq.*

⁶ Russell, *op. cit.*, iii, 100.

⁷ *Bombay Gazetteer*, ix, Part i, 371.

where they live in a state of nudity. Among the Svetāmbaras the image has gold eyes, and a representation of a piece of cloth is carved round its loins. In Mysore the Digambara Yatis, or members of the sacred Order, wear a yellow robe which they remove only when eating food.¹ The remarkable nude Jain images in Mysore and the British District of South Kanara deserve mention.² In Mysore the Bombolas, priests of the Ladar caste, go about naked and offer annual sacrifices to their goddess Bhavānī.³

The nudity rites practised by the Sākta sect, worshippers of the female energy, do not admit of description.⁴

✓ Nudity in ritual naturally is associated with fertility rites. Women who desire offspring walk naked 108 times round a sacred *pīpal* tree (*Ficus religiosa*), winding a cotton thread round the trunk. Trees surrounded with such threads may be noticed at the bathing Ghāts in places like Benares, where, of course, the nudity part of the rite is omitted. This circuit in a nude state is often done after worshipping Māruti or Hanumān, the monkey god, a fertility deity. Among the Kumbīs of the Central Provinces "a variation of the belief is that *pīpal* trees are inhabited by the spirits of unmarried Brāhman boys, and hence a woman sometimes takes a piece of new thread and winds it round the tree, perhaps with the idea of investing the spirit of the boy with the sacred thread. She will then walk round the tree as a symbol of the wedding ceremony of walking round the sacred post, and hopes that the boy, being then brought to man's estate and married, will cause her to bear a son. But modest women do not go naked round the tree."⁵ This theory savours of Brāhmanical interpretation, and it seems very doubtful if the idea of propitiating the spirit of a boy is present in the mind of the celebrant. It is preferable to believe that, on the analogy of tree marriages,⁶ the woman makes the circuit in the course of the sun of the sacred tree in the belief that she thus brings herself into communion with it and imbibes some of its fertilizing qualities. In Bombay, women desiring children go to a temple of Hanumān, the monkey god, strip themselves naked and embrace the image.⁷ In the United Provinces a woman who is childless stands naked facing the sun, and invokes his aid to cure her barrenness, or rather to rid

¹ *Bombay Gazetteer*, ix, Part i, 105; B. L. Rice, *Mysore*, i, 462; Russell, *op. cit.*, ii, 100; Rose, *op. cit.*, i, 104.

² V. A. Smith, *History of Fine Art in India and Ceylon*, 268. Hindu temple images are usually decently draped, but there are exceptions. Battāl Bhaurammā is the naked mother goddess of the Deccan; Sitalā, the goddess of small-pox, is sometimes represented sitting naked on an ass. In Bengal, Siva in his form Mukutakesin, "he with the flowing hair," is naked, and so is a Nāgini, or female serpent deity in Buddhist art.—*Bombay Gazetteer*, xxiii, 656. Ward, *op. cit.*, ii, 15, 104; Cunningham, *Stupa of Bharhut*, 28.

³ *Census Report, Mysore*, 1901, i, 529.

⁴ H. H. Wilson, *op. cit.*, i, 247; Jogendra Nath Bhattacharya, *op. cit.*, 409 *et seqq.*; Ward, *op. cit.*, ii, 193 *et seqq.*; Sir M. Monier-Williams, *Brāhmanism and Hinduism*, 4th ed., 184 *et seqq.*

⁵ Russell, *op. cit.*, iv, 32 *et seq.*

⁶ Sir J. G. Frazer, *The Golden Bough*, 3rd ed., "The Magic Art," i, 40; ii, 26, 56, 100, 316 *et seqq.*

⁷ *Panjab Notes and Queries*, i, 87.

her of the evil spirit which has beset her and prevents conception.¹ It is perhaps due to the feeling of taboo from wearing clothes in a sacred function, or as a fertility rite, that among the Orāons the novices are naked.²

In Southern India Ganesa, the god who favours enterprises of all kinds, is worshipped in secret by women; no males, not even babies at the breast, are admitted. They are stark naked during the rite, they must eat then and there the offerings made to the god, and no male is allowed to touch the sacred food.³ In the same District the Pambā caste worship the Mother goddesses, Rengāyāmmā and Polayāmmā. Women are the chief worshippers, and on one of the nights of the Pongol festival, held at the winter solstice when the sun is believed to return from his southern journey to bless the land, part of the ritual consists in women exposing themselves.⁴ Women of the Kochh tribe in north-eastern and eastern Bengal dance naked round a plantain stem representing Hudum Deo, a naked and extremely repulsive deity, who is pleased to see nude women dancing before him, and to hear obscene songs, in consideration of which he sends rain and good harvests. Males are strictly excluded at the time of the ceremony.⁵ Possibly we may class as fertility rites certain customs connected with marriage, as when a Kanaujiā Brāhman boy in the Deccan is invested with the sacred thread as an initiation rite preceding his wedding, he is stripped naked, and he and his father are made to stand on two stools with a piece of cloth drawn between them. At a wedding among the Kannadiyans, cattle-breeders and traders in the Madras Presidency, the infant bride and bridegroom are seated naked.⁶ Friar Odoric, who visited India early in the fourteenth century, states that at Thāna in the Bombay Presidency he saw a naked woman marching before a bride and bridegroom, who were dressed for the occasion, but the morning after the marriage they went naked as before. Whatever may be the value of the statement, such exhibitions would now be punishable under municipal law.⁷

Similar processions of naked people are recorded in many of the earlier accounts of India, but such exhibitions are now seldom observed.⁸ At Sattamangalam, in the South Arcot District, Madras Presidency, at the festival of the local goddess Māriammā, who controls small-pox and other epidemic diseases, the chief rite is the sacrifice of a goat at midnight, the entrails of which are suspended round the neck

¹ *North Indian Notes and Queries*, iii, 35. On the belief in conception by the sun, see Sir J. G. Frazer, *The Golden Bough*, 3rd ed., "Balder the Beautiful," i, 68 *et seqq.*

² Sarat Chandra Roy, *op. cit.*, 242.

³ F. A. Hemingway, *District Gazetteer of Trichinopoly*, i, 102.

⁴ *Ibid.*, i, 118. For the Pongol feast, see J. A. Dubois, *Hindu Manners, Customs and Ceremonies*, 3rd ed., 571 *et seqq.*

⁵ *Panjab Notes and Queries*, iv, 197.

⁶ *Bombay Gazetteer*, xviii, Part i, 169; Thurston, *op. cit.*, iii, 207. Compare the Orāon initiation, note 2 above. Among the Wagogo of German East Africa the bride and bridegroom sit nude.—*Journ. Roy. Anthropol. Inst.*, xxxii, 311.

⁷ Sir H. Yule, *Cathay and the Way Thither*, i, 60.

⁸ Compare the procession in honour of the goddesses Sarasvatī and Jagaddhātṛī, p. 245 above.

of a Totī, one of the menial castes who act as village servants. He marches stark naked round the boundaries of his village.¹ At the festival of the village goddesses in the Dharwār District, Bombay Presidency, two Mādīgās, village menials, strip themselves naked and carry about in a pot the blood of the holy buffalo which has been sacrificed, and sprinkle it as an offering to the evil spirits which abide at the village boundary. At a later stage of the rite one of the Holeyās, another menial caste, of the Poturājā, or "buffalo king," section, strips himself naked, ties a few leaves of the *nīm* tree (*Azadirachta indica*) which, apparently because of its bitterness, is sacred to the Mothers, round his loins, comes up running like a tiger, pounces on a lamb, tears its throat with his teeth, drinks some of the blood, and then runs with the carcass to the village boundary, possibly as a means of expelling evil from the community and promoting fertility.²

3 Nudity is often regarded as an essential condition for the performance of magical rites. The Silāri in Eastern Bengal is employed to carry out the ceremony of dispersing hailstorms. When he sees a storm approaching he runs out of his house almost naked, and disperses the storm-cloud with his magic wand.³ His colleague, the Garpagārī or Garpagari of the Central Provinces, when a storm is threatened, implores Mahābīr or Hanumān, the monkey god, to disperse the clouds. If this appeal fails, he proceeds to threats, declaring that he will kill himself, and then he throws off his clothes. If her husband happen to be absent at such a critical time, his wife goes and stands naked at the shrine of Hanumān.⁴ In the Trichinopoly District, when in the rainy season tanks and rivers threaten to burst their banks, men stand naked on the embankments; and if too much rain falls, naked men point firebrands at the sky, as in the case of rain-magic;⁵ this nudity is supposed to shock the powers that send the rain, and to cause its discontinuance. In the Panjab the magical power of healing disease is often practised in a state of nudity. In the Sirsā District a man can cure a horse attacked by a fit by taking off all his clothes and striking the animal seven times with his shoe on its forehead. In the Jālandhar District paralysis in cattle is cured by a man stripping himself naked and walking round the animal with a wisp of burning straw in his hand.⁶ The Orāon tribe supplies many instances of similar practices. At the time of the rice harvest they practise a solemn rite for driving fleas out of the village, in the course of which young men strip off their clothes, bathe, wrap themselves in rice straw, and march round the houses, where they receive doles of food. A youth initiated into the mysteries of the Bachelors' Hall, strips himself naked and brings water from the sacred well of

¹ W Francis, *Gazetteer South Arcot District*, i, 93.

² *Bombay Gazetteer*, xxii, 810 *et seq.* In North Borneo a naked man wanders through a crowd and women touch him as a fertility rite.—E. S. Hartland, *Primitive Paternity*, ii, 151.

³ J. Wise, *Notes on the Races, Castes, and Trades of Eastern Bengal*, 369.

⁴ Russell, *op. cit.*, iii, 21 *et seqq.*

⁵ Page 244 above.

⁶ *North Indian Notes and Queries*, i, 136; ii, 64.

the village. A similar custom prevails at the rite for expelling cattle disease.¹ The Sakuna Pakshīs, a class of mendicants in the Vizagapatam District, carry about roots of a plant which are used as antidotes against the stings of scorpions. This plant should be collected on a new-moon day which falls on a Sunday, and the man who seeks for it cuts his loin-string and collects the roots stark naked.²

Nudity is also essential in some forms of black magic and witchcraft. In Gujarāt "to gain control over a spirit the Hindu exorcist goes to a burial-ground alone at midnight on the dark fourteenth day of Aso (October), unearths the body of a low-caste Hindu, and bathes in the river. After bathing, while still naked, he carries the body within a circle cut with a knife or formed by sprinkling a line of water";³ then he goes on muttering charms and evil spirits of all kinds congregate round him.⁴ In Upper Burma, among the Taman tribe of the Upper Chindwin river, if a man wishes to turn himself into a tiger he urinates on the ground, strips himself, and rolls on the place which he has wetted.⁵ A strange tale is told in the United Provinces of a noted witch, known as Lonā or Nonā Chamārin, a woman of the caste of leather-dressers. One day all the village women were transplanting rice, and it was noticed that Lonā could do as much work as all her companions put together. So they watched her, and when she thought she was unobserved she stripped off her clothes, muttered some spells, and throwing a bundle of seedlings into the air, each settled down into its proper hole.⁶

Possibly with the view of freeing the spirit of the dead man from any contamination which may be produced from clothing, some tribes and castes bury the corpse naked. Instances of this custom are reported from the Gurāvs, Kirārs, Korkūs, and Kunbīs of the Central Provinces and the Deccan; and from the Koravas, Mālas, and Yerukulas of Madras.⁷

Survivals in ritual, rightly interpreted, are of much interest.⁸ All the world over, sacerdotal and other religious vestments tend to follow the models prescribed by custom which is often immemorial. Thus, in Egypt, the panther's skin, the ancient attire of the head of a family, or of a noble in full dress, dates from the period when the use of skins for clothing was habitual, and in later times it survived as the obligatory vestment for certain orders of priests, or for dignitaries performing

¹ Sarat Chandra Roy, *op. cit.*, 150, 221, 223, 254; *Journ. Roy. Anthropol. Inst.*, xlv, 346.

² Thurston, *op. cit.*, vi, 263 *et seq.*

³ On these magic circles see W. Crooke, *Popular Religion and Folklore of Northern India*, ii, 41 *et seqq.*

⁴ *Bombay Gazetteer*, ix, Part i, 418.

⁵ *Journ. Roy. Anthropol. Inst.*, xli, 306.

⁶ W. Crooke, *Tribes and Castes of the North-West Provinces and Oudh*, ii, 171.

⁷ Russell, *op. cit.*, iii, 180, 491, 564; iv, 35; *Ethnographical Survey, Bombay*, Monograph 41, p. 7; Thurston, *op. cit.*, iii, 498, 499; iv, 273; G. Oppert, *Original Inhabitants of Bhāratavarsa*, p. 203.

⁸ R. A. Marett, "The Interpretation of Survivals," *Quarterly Review*, April, 1919.

sacerdotal functions of a prescribed nature.¹ Similar customs are common in India. The Todas still wear bark clothing in some of their rites.² The custom of wearing as clothing the leaves of certain trees and plants is common in the worship of some Mother goddesses in Southern India. In the Salem District, at the worship of the sister deities known as Dodammā and Chikammā, Korubā women of all ages, who have bound themselves by a vow, assemble at night near a sacred tank, divest themselves of all their clothing, bathe, and on ascending the steps from the water, put on loose jackets made of pungam or margosa (*Azadirachta indica*) leaves. Then fixing lighted lamps made of rice-flour in their dishevelled locks, they march in procession round the temple. Their nearest male relations move with them, forming a sort of bodyguard to protect them from the public gaze. When the third circuit is accomplished they make obeisance to the deity. The rite is believed to ensure the birth of children.³ At the Periapalayam festival in the Chingleput District, Madras, in honour of the Mother goddess, Māriammā, the worshippers dress in a garment of freshly gathered margosa leaves attached to their waists by a string; and at the festival of the village goddess in the Bellary District in the Deccan, the procession is headed by a Mādigā menial, who is naked save for a few margosa leaves.⁴ At Yellammā's Hill in the Belgaum District, Bombay, people under a vow appear naked before the goddess, tie margosa branches round their bodies from shoulder to knee, walk round the temple clad in this attire, and again revere the goddess clad in ordinary dress, a robe in the case of women and a loin-cloth for men.⁵ At Jekhapur in the Nimār District, Central Provinces, people who have made a vow discard their clothing, put on aprons of margosa leaves, take a pot of water from a well in the village, ascend the hill by night, worship the goddess Jekhadevī, "she who fulfils prayer," and pour the water over their bodies, apparently as a charm for rain or for fertility.⁶

Social or religious custom, or possibly in some cases the influence of taboo, enforce the habit of nudity. The Miri Nāga men, when working in the fields, wear nothing but necklaces and collarets of beads; in the cool of the evening they wrap themselves in blankets, but wear no loin-cloth. The women, though they seem to be usually covered when in their villages with a short skirt reaching half-way to the knee, are said to doff all clothing when at work in the fields.⁷ In the Godāvarī District, Madras, the Komatī women do the cooking in a state of nudity; those who admit the practice say that it is done for the sake of cleanliness, lest the touch

¹ G. Maspero, *The Dawn of Civilisation*, p. 53, note 8.

² W. H. R. Rivers, *The Todas*, 573 *et seq.*

³ F. J. Richards, *District Gazetteer of Salem*, i, Part i, 121.

⁴ E. Thurston, *Ethnographical Notes in Southern India*, 364 *et seq.*; *Castes and Tribes of Southern India*, vi, 106.

⁵ *Bombay Gazetteer*, xxi, 613.

R. V. Russell, *District Gazetteer, Nimār*, i, 227.

⁷ *Journ. Roy. Anthropol. Inst.*, xxxii, 454.

of an impure garment should defile the food.¹ The Porojā or Parjā women of Vizagapatam and Ganjam, on the east Madras coast, are said to wear clothing in their houses, but leave it off when they go outside; “it seems that the tabu is directed against appearing in public fully clothed, and not against wearing decent sized clothes as such.”²

Practices such as have been described in this paper are naturally a fruitful theme for ætiological legend. The Juāngs of Chotā Nāgpur say that “the river goddess emerging for the first time from the Gonasikā river, came suddenly on a rollicking party of Juāngs dancing naked, and ordering them to adopt leaves on the moment as a covering, laid on them the curse that they must adhere to that costume for ever or die.”³ The Gadabā women in Madras wear cloth made of tree fibre because Sītā, consort of Rāma, wore similar clothing in the forest; some of them laughed at her, and she cursed them that ever afterwards they should wear no dress but fibre cloth.⁴ A Kanara story runs that the headmen of a certain village were once upon a time taken naked for execution on the seashore; but in their shame they gathered leaves of the “five-leafed” trees and made themselves aprons, whereupon their guards in pity released them, and since then they have worn nothing else.⁵ The Devāngā weavers say that Vishnu gave to one of their ancestors some fibres of the lotus flower that grows from his navel, and taught them how to make clothes for gods and men; it was this culture hero who instructed his descendants in the art of making fibre cloth.⁶

¹ F. R. Hemingway, *District Gazetteer, Godāvari*, i, 55.

² Thurston, *Castes and Tribes of Southern India*, vi, 219.

³ Dalton, *op. cit.*, 156.

⁴ Thurston, *op. cit.*, ii, 245. Compare the story of the Porojās or Parjās, p. 240 *et seq.* above.

⁵ Oppert, *op. cit.*, 174.

⁶ Thurston, *op. cit.*, ii, 157.

NOTES ON ROTUMAN GRAMMAR.¹

By A. M. HOCART.

THE Rotuman language cannot be elucidated in all its details without a careful examination of collected texts. As such a work must be deferred for some years, I have, while the language is still fresh in my mind, set down the essentials in the hope that they may prove of use to residents in Rotuma and to students of language at home, who might form an erroneous idea of Rotuman if they were to judge it by the existing literature.

For this language has never yet, to my knowledge, been fathomed. If anyone should find this hard to believe of an island that has had missions for more than fifty years, I can point to the two totally different orthographies in use in Rotuma, the Methodist and the Roman Catholic, to say nothing of the spelling of the chart and that of visitors. Thus the Methodists spell *tafi*, the Roman Catholics *têf*, Mr. Allardyce, in a paper on "Rotooma and the Rotoomans,"² *tef*; to my mind the right spelling should be sometimes *tafi*, sometimes *tâf*, according as may be required by certain very definite rules. The Roman Catholic version of the Lord's Prayer runs: "*Otom Ufa e selo la ha ou as, la leum ou puer . . .*" The Methodist version is very different, but translating the Roman Catholic into their spelling, we should have: "*Otomis oifa e selo, la haa ou asa, la leume ou pure . . .*" The actual pronunciation would be represented thus: "*Otom ô'fa e selo, la ha' ou asa, la leum ou pure . . .*"

As a matter of fact neither of the existing orthographies satisfies anyone: Father Lejeune is reforming the Roman Catholic one, and the Methodist system puzzles every white man.

It may seem sheer presumption to attempt after a stay of not quite four months to unravel a problem which has baffled residents of old standing. But as a matter of fact the language is very easy, if only the investigator is firmly convinced that if words have different forms, the use of each form must be governed by definite rules. But residents in Rotuma hearing sometimes *pure* and sometimes *puer* have been inclined to set it all down to the native's "little ways of speaking" and have therefore not been induced to seek for rules where they assumed there were none.

¹ I must acknowledge my indebtedness to Rev. C. Roget, of the Methodist Mission, and Rev. Father Lejeune, of the Marist Mission, who have supplied me with literature which has been of great help to me. In fact, imperfect as the orthographies may be, I could not have made head or tail of the language without their aid.

² *Proc. of the Queensland Branch of the Geog. Soc. of Australasia*, 1st session, 1885-6.

For my first clues I am much obliged to Rev. C. Roget, who assisted me in the cross-examination of one of his native ministers. The clues thus obtained I kept in mind while being spoken to, or while taking down tales and legends which I recorded as they sounded. Some of them were confirmed by experience and some rejected or modified. The outcome is the present outline.

CONSONANTS.

The following are the consonants used in Rotuman :—

f, h, k, l, m, n, ng, p, r, s, t, tsh, v.

h at the end of a syllable tends towards German *ch*.

k would be represented more accurately by *χ*.

ng as in *sing*.

s inclines to *sh* (*š*).

tsh is spelt *ts* in the Roman Catholic books. It is indifferent which spelling we adopt as it really lies between the two, but most Englishmen would identify it with English *ch*.

v is so spelt by both missions, but as a matter of fact it is neither *v* nor *w* before a vowel, and it is distinctly more like *w* at the end of a word, so much so that I always spelt *Sau kamo* at first for *Sav kamo*. Still not to depart too widely from the accepted spelling I will keep to the *v*.

' is like the Samoan break : it represents likewise an original *k*. It is not noticed at all by the present orthographies, yet, as we shall see, certain sound changes must always remain a puzzle until we recognize its existence. It is not to be mistaken inside or at the end of a word, but at the beginning I am rarely certain.

VOWELS.

The fundamental vowels are—

a, e, i, o, u.

e and *o* are moderately broad.

These five vowels are the only ones used in the Methodist spelling. The native knows, or rather feels, the conditions under which these vowels are modified, and therefore modifies the vowels accordingly, as he reads ; but a European, ignorant of the rules, finds no guidance in the writing, as these vowels are apt to be considerably modified by a succeeding *e* or *i*, or *u*, giving rise to the following derivative vowels.

(1) *a*, followed directly or indirectly by *e*, becomes *ā* which sounds like a very broad *e*. This happens, however, only under certain conditions, which are that *a* be long or both accented and long. My uncertainty on this point is due to the fact

that I attended to the accent only while I was in Rotuma, and this seemed to account for almost all cases.

Vāe : to divide. M. *Vae*. S. *Vae*.¹

Vāve : fast. M. *Vave*. S. *Vave*.

But :

Vaséa, *Varéa* : proper names.

aléte : snake.

alél : tongue.

There remained, however, one or two exceptions :

ta'e : don't.

kāte ² : not.

It was not till after I had left Rotuma that quantity occurred to me as being the sole or joint factor. But as this only occurred to me because in my memory the *a* of *kate* and *ta'e* were distinctly short, whereas *ā* was always long, it may safely be assumed quantity governs, the only doubt being whether it does so alone or with the accent.

If the *e* is elided *ā* remains *ā*.

āf : 1000. M. *ef* (sic). S. *Afe*.

It will be noticed that the Methodist spelling has gone wrong here. It requires indeed a good ear and long practice to distinguish with certainty between *ā* and *e*.

a preceding *ā* is attracted to it :

vāvāne : husband. M. *vavane*.

(2) *a* before *i* becomes *q* subject to the same conditions and doubt as the change of *a* to *ā* ; *q* is a very broad *o* and is spelt *o* by the Roman Catholics, but this makes it impossible to distinguish many words, whereas there is no confusion with the Methodist spelling. This will be clearer as we proceed.

āitu (? *qitu*) : spirit. M. *oiitu* (sic). S. *aitu*.

mātit : cold (objective). M. *matiti*.

But :

matit : cold (subjective).

hanisi : to love.

a in both these words is distinctly short (in my memory).

This law is still in operation and affects words borrowed from the English :

Tomāsi : Thomas ; but—

Akanisi : Agnes.

a before *q* is not attracted :

lalqvi : feather.

¹ M. = Methodist spelling. S. = Samoan. F. = Fijian. U. = Uvean (Wallis Isl.).

² The full form only occurs in poetry ; in prose it is always *kat*.

It may be in this case because the first *a* is short (as far as memory may be trusted).

(3) *a* before *u* becomes *q*, under the same conditions and with the same reservations as for *ā* and *q* before *i* :

Squ : sacred chief. M. *Sau*. F. *Sau*.

hāfu : stone. M. *Hafu*. F. *vatu*.

But :

hanúa : land. S. *fanua*. F. *vanua*.

atúa : ghost. S. *atua*.

In the following word I am sure the *a* is short :

af : away (spelt by the natives *afu*). S. *atu*.

On the other hand we have—

qf (*qfu*) : a row. F. *atu*,

about which I would not express an opinion.

(4) *e* is narrowed by following *i* or *u* :

lēlei : good. S. and U. *lēlei*.

pēlū : war.

Exception : *lēpi* : sandy point, not *lēpi*. Query : *lēpi*?

(5) *o* is also narrowed by following *i* and *u* : with the same remarks as in the foregoing cases :

hoi : turtle.

hō'i : to return.

mou : firm.

fol (*u*) : three. S. *tolu*.

But :

olōlūm : lucky.

As this narrowing of *e* and *o* does not modify profoundly the sound of the vowel to our ears, it attracts little attention, and I have therefore less carefully noted it. It will not, as a rule, be indicated.

Turtle in Rotuman is *hoi*, sting-ray is *hqi*. The Roman Catholics spell both *hoi*. This is obviously a great drawback, for even the context, in such a case, will not tell us how it ought to be pronounced, and which of the two it is. The Methodist spelling *hoi* and *hai* is still further removed from the actual sound, but it allows no confusion, and anyone acquainted with the rules will know immediately how the latter word is to be pronounced.

REDUCTION OF VOWELS.

Rotuman, under conditions to be explained later, elides the final vowel. The elision of *e*, *i* and *u* affects certain vowels. This process I call reduction, and indicate

by *ö* over the vowel (German *Umlaut*). Neither the elision nor the reduction is recognized in the Methodist spelling.

(1) The elision of final *i* reduces preceding *a* to *ä* (I apologize for this cumbersome notation, but can devise no better one). This is a sound between *a* (as *e* in French *je*) and *e*. It is spelt *è* by the Roman Catholics. It is short.

Fävi : to anchor—*fäv*.

mäfi : tide—*mäf*. F. *mati*.

In the Methodist spelling these words always remain *favi* and *mafi*.

The elision of *u* does not reduce *a* :

. *hafu* : stone—*haf*.

(2) The elision of final *e* or *i* reduces preceding *o* to *ö*, which is like German *ö*, only tending to *ü*, so much so that I have sometimes taken it for *ü* :

Tole : to carry—*töl*.

tshöni : to run—*tshön*.

Preceding *o* is attracted to the following *ö* :

poto'i : buttocks—*pötö*.

ohöni : mother—*öhön*.

(3) The elision of final *i* reduces *u* to *ü*, which sounds like German *ü*, only more closed and tending to *i* :

muri : behind—*mür*. S. *Muli*.

'uli : skin—*'ül*. F. *kuli*.

a preceding *ü* is changed into *ä* :

ma'uri : to live—*mä'ür*. U. *Ma'uri*.

Here it is that we see the importance of '. For the second vowel of a diphthong is never elided, any two successive vowels at the end of a word being reckoned as a diphthong. Thus

hoi can never become *hō*, but

ho'i regularly becomes *hō'*.

Until the European recognizes the existence of ', he cannot make out why M. *fai* (to write) is sometimes pronounced *fä*, whereas M. *fai* (to fell) always remains *fai*. The explanation is that the first is

fä'i, which by reduction becomes *fä'*,

while the second is

fäi, which, admitting of no elision, remains *fäi*.

In the same way

ho'i (to return) makes *hō'*, but *hoi* (turtle) makes *hoi*.

hā'i (to blow a gale) makes *hā'*; but *hāi* (sting-ray) makes *hāi*.

The full list of Rotuman vowels is therefore :

a, ä, q, q̄, e, e, i, o, ö, u, ü.

ABSOLUTE AND CONSTRUCT CASES.

All uncompounded words in Rotuman except some monosyllables¹ and those ending in diphthongs have two forms.

The full form always ends in a vowel and never has two consonants together (provided it is not a compound). In this form Rotuman words are like those of any Polynesian language.

The short form elides the last vowel with reduction of the penultimate, if reducible, or it transposes the last consonant and vowel :

La'o : to go—*la'*. F. *Lako*.

mōri : orange—*mōr*. S. *moli*.

fāenga : speech—*fāeang*.

In actual speech most words end in a consonant, and compound words generally have two successive consonants at the point of suture, which gives the language a very un-Polynesian sound :

fuang ri : foundation, from *funga* (standing place) and *ri* (house).

ō'fa : father, from *o'i* (parent) and *fa* (male). M. *oifa*.

The full form I will call the "absolute case," and the short form the "construct case." These terms, borrowed from Hebrew grammar, do not fit exactly, but they express sufficiently the nature of both, and will do till something better is suggested.

Here is a representative list of words in both cases :

Absolute.	Construct.
<i>Mafa</i> : eye,	<i>maf</i> .
<i>la'o</i> : to go,	<i>la'</i> .
<i>Vāvāne</i> : husband,	<i>vāvān</i> .
<i>fā'i</i> : to write,	<i>fā'</i> .
<i>angsi</i> : mullet,	<i>anūs</i> .
<i>hāfu</i> : stone,	<i>hāf</i> .
<i>feke</i> : to be angry,	<i>fek</i> .
<i>he'o</i> : to call,	<i>he'</i> .
<i>pēlu</i> : war,	<i>pēl</i> .
<i>fepi</i> : to be late,	<i>fep</i> ,
<i>li'u</i> : deep sea,	<i>li'</i> .
<i>osi</i> : to prepare,	<i>ōs</i> .
<i>to'i</i> : to break,	<i>tō'</i> .
<i>tole</i> : to carry,	<i>tōl</i> .
<i>mo'o</i> : to hide,	<i>mo'</i> .
<i>futi</i> : to pull,	<i>fūt</i> .

¹ Others are reduced to a consonant, thus *ra* generally occurs as *r*.

Words ending in a consonant and *a*, when the antepenultimate is other than *a*, are peculiar. They invert the final syllable, placing the *a* before the consonant :

Rotuma—*Rotuam*,
funa : eel—*fuan*,
ho'a : to take—*hoa'*.

If the penultimate is *u*, the *a* becomes *q* or something near it :—

hula : month—*huql*.

If it is *i*, the *a* becomes *q̃* :

mapinga : grandchild—*mapiq̃ng*,
hi'a : to lay hands on—*hiq̃'*.

But if *i* and *u* are part of a diphthong they do not seem to have that effect :

Founga : proper name—*Fouang*,
haina : women—*hain*.

Or the rule may be that this effect does not take place when the consonant is a nasal, as *Rotuma* and *funa* make respectively *Rotuam* and *fuan*, not *Rotuqm* or *fugn*.

For the sake of simplicity and because I am not quite clear about these changes, I have not indicated them as a rule, but spell *hual*, *hi'a*.

In some words *e* and *o* suffer this inversion : it is not quite clear which do and which do not : all I can say is that it only occurs where there could be no reduction of the antepenultimate. Thus :

pure : to rule—*puer*,
mqiro : a plant—*mqior*,
piko : lazy—*piok*,
siko : to lie—*siok* ;

but never

tole—*toel*, for it is reduced to *tōl*.

Words borrowed from the English are subject to this rule as to all others :

Tevita : David—*Teviat* (not *Teviāt*),
suka : sugar—*suak*.

Mr. Roget tells me he has heard *utsha* for a watch, the process being reversed : the form *uatsh* is conceived as the construct case whence the absolute *utsha* is deduced.

The inverted form, though equally long in writing, is pronounced more rapidly than the full form, and is felt as shorter. The vowels, as we have seen, have a tendency to be reduced. One informant condemned *hosa ne'ai* (flower) as slow (*fep*) ; it should be *hoas ne'qi*. "Some things," he added, "you must speak quickly, and some things you must speak slowly." It is because they have not realized this that Europeans have made so little progress with the language.

The Methodist spelling does not as a rule indicate the inversion.

ELIDED ABSOLUTE CASE.

The last vowel is sometimes elided in the absolute without any modification of the preceding vowel :

hən for *həni* : woman,

rosrosi : crafty (not *rōsrosi*).

THE *E*-FORM.

Many words ending in *a* often change this *a* into *e* :

Rotuma—*Rotume*. .

atua—*atue*.

Words with the suffix *nga* never change *a* into *e*. I have never heard *fāenge*.

Words such as *moa* (fowl) and *roa* (long) also have no *e*-form. The rule is possibly that words ending in diphthongs have not the *e*-form.

USE OF THE ABSOLUTE CASE.

The absolute case is used :

- (1) Always in poetry, except sometimes as the end of a line, thus :

Lāngi ta hā'ihā'i ma fāiāk,

vīlī sio ke Ferekituanāk.

Sa qitu ta vāenga rue, etc.¹

In prose this would be : *Lāng ta hā'hā' ma fāiāk, vīl sio ke Ferekituanaki. Sa qitta vāeang rua* (? *rue*). . . .

- (2) In nouns and attributive adjectives not followed by any determinant, nor preceded by the indefinite article *ta*, nor forming a compound verbal expression. The rule can only be stated negatively, and can only be understood by referring to the cases in which the construct case is used.

TSHULI fer : the *tshuli* birds fly,

FAMORI fea : the people are afraid,

as TONGI : a hereditary name,

fa MAFPONGI : a blind man,

hān PIKO : a lazy woman.

- (3) Nouns with the article *-t* :

PUREt e Ahau : the Commissioner in Ahau,

HANit onon fesi : the woman to whom the *fesi* tree belonged.

¹ "The wind blew, blew and was weary; only Ferekituanaki fell. The *sa aitu* were divided into two teams. . . ." (The Legend of Tokainiua.)

- (4) Names of places in which the speaker is not :

ngou la' se ROTUMA : I go to Rotuma.

Also names of places or persons when no compliment is intended :

Tausie : proper name of a commoner (from *Tausia*),

Motusa : if a Motusa man is speaking to an outsider.

- (5) Nouns in the vocative when followed by *e* :

Tshiotshi ē! Heigh! George!

- (6) Verbs in the future under conditions I cannot define, but it would seem that when the future indicates purpose the absolute is used :

nam la ng¹ KA'I : give it that I break it,

ngou kat inea r la FÄEANG AKI se ngangatsh te'is : I don't know it (well enough) to relate to this gentleman.

- (7) Verbs with the suffixes *m(e)* (hither), *a*, *en(a)*, *of*, *af(u)*, *ang* :

SURUM : to come in,

mata hñn ta MENGUA : and the woman was comforted,

OFIEN : it is all over,

SURUof : to go in,

HAINOSOang : to marry each other.

- (8) Questions seem to affect the absolute :

ingka'i? No?

In the simple affirmative it is *ingkä'*.

- (9) The elided form of the absolute seems only to be used at the end of a sentence, or as the first part of a compound word in the absolute case :

fa ROSrosi : a crafty man.

USE OF THE CONSTRUCT CASE.

- (1) Nouns and attributive adjectives followed by the article *ta*, by an attributive adjective or an adverb :

FAMÖR Rotuma : Rotumans,

fa MAFPÖNG ta : the blind man,

HÄN PLOK pqu : a very lazy woman.

- (2) Nouns preceded by the indefinite article *ta* :

ta hñn : a woman.

- (3) Nouns in the vocative :

pūs! Pussy!

Teviat! David!

Tua'! Tu'a!

Short for *ngou* (I), or more probably a (hypothetical) *ngo*. Cp. *Otou* and *oto* : mine.

- (4) Names of a place in which a man is at the time :

ia pum se UAF : he came to land (if the speaker is on shore).

Also in a polite way :

Tausia : name of a chief,

Motuas : if an outsider is speaking to a Motusa man.

- (5) After non-locative prepositions the construct case seems usual though not invariable :

po e MISIAL : to catch the measles. (Lit., to be caught in the measles.)

This may possibly be explained as a compound verbal expression : to catch-measles (*v. infra*).

- (6) Verbs and predicates except sometimes in the future :

ia MAFPÖNG : he is blind,

TÖNG as : to inherit a name,

qe PIÖK : you are lazy,

ia PUER se Rotuam : he rules Rotuma.

- (7) Nouns used indefinitely as the object of a verb and immediately following it, and translated in English by a plural noun without the article :

ngou 'a MÖR : I eat oranges,

fä' säs : to draw sea water,

Rotuam 'a FAMÖR : Rotuma ate men (was cannibal).

This rule seems to be a corollary of the preceding one, for the noun with the verb forms a compound verbal expression : '*a mör* is orange-eating : '*a famör* is cannibal. This explanation is borne out by the fact that when such an expression is used as an attributive adjective it stands in the absolute :

fa 'a famöri : a cannibal. (Lit., a man eating men.)

Ma the possessive, meaning "to possess," "to have," is treated like a verb :

Squ ma on siav : the *Sau* has a fan (Abs. *siva*). (Lit., the S. with his fan.)

Ngou ma oto puk : I have a book (Abs. *puku*). (Lit., I with my book.)

USE OF THE *E*-FORM.

The *E*-form is used :

- (1) With the article *-t* :

atuet : ghost,

rän ruet : the second day (*rän rua* = two days).

- (2) In answer to the question what is it, or in apposition :

Rasmutmut, atue : Rasmutmut, a spirit,

tupue : it is a *tupua*.

- (3) I have only noticed the form *Rotume* as an adjective as in :

fa Rotume : a Rotuma man.

Cases 2 and 3, and also *rġn ruet*, may be grouped together as adjectival, but that does not explain (for the present at least) the *e*-form of names of persons such as *Founge*, *Tausie*.

In the above examples the *e*-form is the absolute case. It is plainly opposed to the construct in *Tausie*, which is the ordinary form, whereas *Tausia* is the respectful form. But

- (4) they always say :

hanue ta, tupue ta

where the construct case is required. On the other hand we have

ta hanua, not *ta hanue*.

The *e*-form may therefore be said to be always absolute with one exception which we cannot at present explain.

THE TWO ORTHOGRAPHIES.

We can now see how it is that two so opposed systems of orthography can have arisen in Rotuma.

The Methodist orthography writes everything in the absolute case and takes no account of the modification of vowels. To a native this presents no great difficulty, as he can always infer the proper form of the word from the neighbouring sounds and from the syntax. Confronted with the following text :

Ia faefaenga ma Sungukuru e Tarasua, ma ia kota imo kava, ma lao se Ainafa (He talked with S. in T. and then he drank kava, and went to Ainafa), he transforms it, as he reads, into : *Ia fäefäeang ma Sungkur e Tarsua, ma ia kota iom kav. ma la' se Ainafa*.

The Methodist spelling is really the native spelling and has been to a certain extent dictated by them. It is the best in existence, since we can always infer the construct from the absolute. But it stands to reason that great proficiency in reading is hardly attainable when almost every word has to be recast as the reader proceeds. I have indeed been struck by the slowness with which even some of the native ministers read. Moreover, some cases remain ambiguous. Thus *famori ala* may stand for *famör ala* (dead men), or *famori al* (the men died). If I write *po anasi* it is not clear whether I mean catching mullets (*po anäs*) or catching the mullets (*po anqsi*).

I believe the use of the *Umlaut* would present no difficulties to the natives, at least the younger generation. If they have imposed the present system it is

because they are unacquainted with any mode for representing the derivative sounds. They cannot therefore omit the final vowel in writing, or it would not be clear what the word is. Thus we have 'uli (skin) and 'ulu (bread-fruit): if we drop the final vowel in writing without modifying the first syllable, it is not clear whether 'ul stands for 'uli or 'ulu. If we use the *Umlaut* there can be no doubt whatever.

The Roman Catholic orthography on the other hand spells most words in the construct. This is the natural tendency of the White Man; for as most words in any sentence are in the construct, it is the form he learns first; when the absolute does occur he does not take much notice of it. This orthography has not the virtue of consistency, and, as we have seen, the sounds are badly represented, leading to confusion. The relationship of fundamental to derivative vowels is also obscured.

THE ORDER OF THE SENTENCE, ETC.

The rules set forth above are the essence of Rotuman grammar. If this initial difficulty is passed the rest is plain sailing, and formidable as it appears at first, Rotuman turns out to be much easier than languages like Fijian, Samoan, or Tongan. The order of the sentence is the European: subject, verb, object; only that the adjective follows the noun, as in the neighbouring languages.

There is no distinction between past and present; the future is indicated by *la*:

ngou lu la': I shall go.

fu se' la mak: stand up to dance.

THE ARTICLE.

The article is perhaps the only remaining difficulty. There are three articles: *ta* (the) after the noun, *-t* after the noun, *ta* (a) before the noun.

The article is never used in the plural:

fa fol: the three men.

The use of *-t* requires some explanation. It is used:

- (1) When a thing is defined by its place:

Solot e Sisilo: the hill in Sisilo,

pelut e Lopta: the battle of Lopta.

- (2) When it is defined by a relative sentence:

fat ne lim e asa: the man who came yesterday,

fat onon hanuet e Paptea: the man to whom belonged the land in P.

- (3) In the (distributive) idiom:

le'et ma on fupang, le'et ma on fupang: a man with his flesh, a man with his flesh, *i.e.*, each man with his flesh.

- (4) With possessives:

Oto hanuet: my land.

The distinction between *oto hanue* and *oto hanuet* is not clear.

Oto hanueta would appear to mean "that land of mine."

(5) Answering to our "there was . . ."

Hqñi, on as . . . : there was a woman whose name was . . .

Hñ ta on as would mean : that woman was called.

SPECIMEN.

I will conclude with a specimen of the language, which the reader can easily translate with the following vocabulary of words that have not already occurred :

Sq̄u noh e on hanue ta, ma lim la kak̄u e v̄itokat e hñn h̄af. Ma ia mamas se ulang h̄af ta ; ma h̄af ta es lelea e fa ta. Noh e Or̄i ta inos ta, eake noh e R̄ñ te. Ma, h̄ñ ta efmafua e Sq̄ut. Ma nono, ma h̄q' on hula, mata a'su sio on le'ta, ma le' fa, ma he' se' on as Vavaipar̄o. Mata nonō, ma k̄quike tak se f̄ñ h̄af ma mōs ; mata h̄ñ ta h̄ia' ma po se an̄si, ma hanghang on le'et. Ma ia hanghang on le'ta e an̄si ma mafua.

Noho : to dwell—*e* : in—*ona* : his—*ma*, *mata* : and—*lim*, *leume* : to come—*kak̄u* : to bathe—*v̄itoka* : fresh water spring coming out on the beach—*huni* : base—*mamas* : to dry—*se* : to—*ulanga* : top—*es lelea* : to bear children—*le'e* : person, child—*Or̄i* : Spirit Land—*inoso* : man and wife, to marry—*eake* : not—*R̄ñ te* : the World (opposed to Spirit Land)—*ef mafua* : to conceive—*nono* : in course of time—*h̄q'u* : to reach, arrive—*hula* : month—*a'su* : to give birth—*sio* : down—*he'o* : to call—*se* (? *se'*) : a particle after verbs that seems to mean completion—*asa* : name—*k̄quike* : shoal—*taka* : to lie—*f̄ñi* : underneath—*mose* : to sleep—*po* : to catch—*an̄si* : mullet—*hanga* : to feed—*mafua* : old, adult.

COMPARATIVE PHONETICS.

The Rotuman consonants have suffered considerable changes, as will be seen on comparing them with the Fijian and Samoan :

Fijian.	Samoan.	Rotuman.
mb : <i>mba</i>	= —	= p : <i>pa</i> .
dh (ð) : <i>modhe</i>	= - : <i>moe</i>	= s : <i>mose</i> .
nd : <i>ndalinga</i>	= t : <i>talinga</i>	= f : <i>falinga</i> .
ngg : <i>wungga</i>	= ' : <i>va'a</i>	= k : <i>vaka</i> .
k : <i>ika</i>	= ' : <i>i'a</i>	= ' : <i>i'a</i> .
l : { <i>lako</i>	= —	= l : <i>la'o</i> .
{ <i>tolo</i>	= —	= r : <i>foro</i> .
	p : <i>poto</i>	= p : <i>poto</i> .
t : <i>tolu</i>	= t : <i>tolu</i>	= f : <i>fōlu</i> .
v : <i>vanua</i>	= f : <i>fanua</i>	= h : <i>hanua</i> .

SOME OBSERVATIONS ON THE PHYSICAL CHARACTERS OF THE MENDE NATION.

[WITH PLATE V.]

By F. W. H. MIGEOD.

THE following notes and table are the results of a number of observations I have made of the physical characters of men of the Mende tribe. They were all made in the Gold Coast.

The Mende nation itself inhabits the eastern part of the Sierra Leone Protectorate. It has probably been long resident in that region, and certainly seems to have been there as far back as the second century A.D. I base this on the fact that the locality of their great society, the Poro, is shown in Ptolemy's map under the name of *Purrus campus*, of which the modern rendering is "Poro bush."

The Mende is a mixed race, being partly Mandingo in origin, and consisting in part of some other submerged tribe or tribes. With the idea of obtaining some light on this theory I drew a curve of heights in eighths of inches, of 700 male adults taken from a much larger number of observations. The diagram I made first of all to include 480 individuals only. The waviness of the curve produced made me think that there might be something wrong, or that by chance it happened that individuals more approaching a given height had been taken by reason of their better fitness for some particular duty, though, as a matter of fact, this was not the case. I therefore added the heights of 220 more men taken without any selection, and on plotting them out found that the new line ran very nearly parallel with the first line. Confirmed as it thus is, the existence of considerable mixture of race is indicated. My study of the Mende language, and of those of the surrounding tribes, had shown me that there was considerable mixture in the speech, of no great antiquity. The linguistic and racial mixtures may therefore be held to run parallel.

From 5 feet 2 inches to 5 feet $3\frac{1}{4}$ inches there is a large group. Then, again, 5 feet 4 inches seems a favourite height; in fact, there are more individuals of that height than any other. Again, further, there is a big group of from 5 feet 5 inches to 5 feet $5\frac{1}{2}$ inches. The number of individuals of 5 feet $7\frac{1}{4}$ inches is also exceptionally large. If the nation were one long unmixed, we should find, I think, a curve produced which would be uniform, and not erratic.

I think, therefore, it may be said that the figures indicate the intermixture of a very short race with a tall race, and the fusion not yet complete.

I must mention that the measurements were not all taken by myself personally, and there has been a tendency to avoid eighths of inches, but the general result is not, of course, affected thereby. There are, further, two things which prevent absolutely relative accuracy. One is the thickness of a man's hair, which may be considerable, owing to its woolly nature, thus tending to give a greater height value. The other is the time of day he was measured, an evening's record being very appreciably shorter than a morning's record. Most of the measurements were, as a matter of fact, taken in the forenoon.

The tall element in the nation is the Mandingo. This widely spread race brought their language with them, for the majority of words in the Mende vocabulary are of Mandingo origin more or less corrupted. The phonology, however, differs, and the grammar also to a large extent.

The aboriginal short race with which this tall race fused seems in former times to have been widely spread immediately behind the coast line, throughout the forest region. That this was so seems to be supported by the close resemblance there is to individuals in other tribes, not only those speaking related languages, but others such as Temne and Limba, whose languages are radically different.

The evidence afforded by language I need not discuss here, having already done so in my work, *The Languages of West Africa*. That the mixture cannot be of very great antiquity is clear, as one can perceive the distinction of types after only a short acquaintance with the people.

Reverting to the figures of heights, it may be noted that one individual is recorded of 6 feet 1½ inches, the next tallest being only 5 feet 11 inches. He may therefore be regarded as quite abnormal. At the other end of the scale is a person of 4 feet 8¾ inches only. This man, as well as the others below 5 feet in height, are all well formed, and not abnormal in any way. One of them, whose general description I unfortunately did not record, may be seen in the group in Plate V, No. 1, marked X. I kept him, as I have done others, under observation for a time, and have usually found these small men very troublesome. It must be clearly understood that these men are in no sense dwarfs. Dwarfs do exist in the Mende country. Some are depicted in Alldridge's book, *The Sherbro and its Hinterland*. Here they are seen to be persons of quite peculiar build, having very large heads and very short stumpy legs. The short men included in my record of heights are not fairer in complexion than the majority of the nation. They are of the usual brown or dark brown colour. It is not therefore possible to connect them with the light-skinned Pygmies of the Congo region. It is more likely they represent a sub-merged race of blackish Pygmies.

In the annexed table I have summarized the descriptions of fifty-nine male adults. I will discuss the headings in their order of sequence.

As regards names, a Mende is given a name at birth by his mother. When he becomes adolescent he drops his birth name and takes another, which is called his

Poro name, because he takes it when he goes to the Poro society for his education. Often these latter names are Mohammedan names. When a Mende goes away from his home to work, it is a common custom, as it is with the Kroo and most other tribes, for him to take a European name, usually an ordinary Christian name. Less commonly he will take the name of a place he has been to, or some Mohammedan name. Curiously enough, whilst the Kroomen, their not far-distant neighbours, also take English names, they are usually different, so that after some practice it is possible to tell a tribe from whatever part of the coast by the style of "English" name a man takes. Changes of name with change of employment are common. The more reliable men, however, do not change their names. Further, given a group of Mende men, and it being stated that one, say, bears the name of Tommy, it is possible to single him out at once, because such a name is usually taken by men of certain build only; and so with other names.

I have inserted the town or village of each person enumerated, though the information will convey little to the average reader, to whom the locality of the whole nation seems but an insignificant spot on the map of Africa.

The age of a black man is usually a matter of speculation, and without some guide it is difficult to form even an approximate estimate. I have known some Mende men who at first glance look like youths of eighteen. Yet, seeing that I knew them perhaps fifteen years or even more ago, and they were adults then, it is palpable that their age is not what it seems. There was much fraud in the old slave days over the age of slaves exposed for sale, oldish men being passed off as youths, and paid for as such. In this table I have based the age on two observations with an interval of a varying period of years.

As regards the shape of the head, the majority are dolichocephalic; but comparatively few individuals have this feature in an extreme degree. As can be seen, there are six brachycephalic specimens and fifteen mesocephalic out of fifty-nine. Their faces are usually of medium length compared with breadth. The cheekbones are fairly prominent. The head, measured over the ears, is in by far the majority of cases high, and projecting occiputs are not the rule. Whilst I have shown in the table a number of cases of what I have called great prognathism, it is very much less than what is often met with in other tribes. In fact, prognathism is, on the whole, comparatively slight. The forehead is almost invariably vertical, and then turns back with a rather sharp curve. In some cases it is fairly high, though not, of course, so much so as would be seen in a long-faced European with what would be called a high forehead. The breadth of the forehead is commonly deceptive, owing to the prominence of the temporal ridges running back from the outer corner of the eyes. The eyes often are not very wide apart. They may seem farther apart than they are in individuals the bridge of whose nose is more than usually flat. The most prominent nose I recorded was that belonging to No. 3, who has a large Roman nose. The chin is for the most part receding, often very much so,

and is so even when other features are out of the ordinary. Misshapen ears are very rare. They are from small to medium, and even when I have marked them as outstanding, they are not so to any great extent. Great flapping ears, so often met with among Europeans, are unknown. The lips are usually thicker than a European's, but the aggressive thickness so commonly shown in sketches as a feature of a typical negro is very rarely seen. On the other hand, very thin lips are rare. The teeth are for the most part good, though caries is not unknown. The upper middle incisors are commonly filed on the contiguous sides so as to leave a gap. Occasionally individuals are met with who have all their front teeth filed to points, but it is distinctly rare.

For the most part the Mende is not a hairy man. The hair on his head is, of course, crisp and curly, as is common to all negroes. On his face it is scanty, being usually only a slight moustache, but it strengthens on his cheeks and chin as he grows old. Baldness, either on the crown of his head, or running back from his forehead, is occasionally met with, and not necessarily among very old men. Nearly all have some hair on their legs without its extending to their thighs. If they have any on their chests I have classified them as having "much" hair. Whilst, therefore, entirely hairless men are extremely few, those with much body hair are equally few. A large proportion of the hairy men I have met with have been between the heights of 5 feet 6 inches and 5 feet 7 inches.

In dealing with skin colour I have adopted the distinction of black, brown and red. As a matter of fact, really black persons, as some of the Nilotic negroes seem to be, are quite unknown. They are at most only a very dark brown. The "red" represents a very pale colour. These red men, however, certainly those I have here described, were not mulattoes, but I have not been able to pursue the origin of their fair complexion. It may be due to European admixture, but where this exists it is usually obvious, as the features are always more refined. On the other hand, there are many indications that a large part of what is now negro country was in former times occupied by fairer races. The Fula are a case in point of an ancient surviving fair race not yet submerged in the flood of negroism, though in many parts fast becoming so. The Gola tribe, too, in Liberia have, I understand, a legend that they were in former times much fairer than they now are. It is therefore by no means necessary to ascribe a European origin to fairness of complexion, though it is more than likely to be the case near the European settlements.

Whilst on the subject of colour, I may note here that Africans who are albinos have brown hair.

One instance that came to my notice is worth recording, though the man was not a Mende. It is that of a black man who became white except for a few freckles. I did not know him personally when he was black, but his record is obtainable, as he was in the Gold Coast Regiment, and only took his discharge at the end of 1918, or early in 1919. He was a Dagomba, the Dagomba being a Moshi offshoot.

Some years ago he fell sick and went to hospital, and whilst there his black pigmentation left him.

As to general build, among the shorter men we find the typical forest negro. This is the man with long trunk and short, sturdy legs. For the most part he is very solidly built. This bulk, however, is all muscle, and I do not think that his bones are any thicker than a more slimly built countryman, as he is usually not able to carry for long distances the same weight that a tall though slimly built man will carry. The taller men are more symmetrically built from a European point of view. There is a better proportion in the length of their limbs, but really long legs are, I might almost say, absolutely non-existent. I have not recorded a single instance.

Malformations are few; anyhow, among those who leave their own country to go abroad. One sees enlarged navels, and I have recorded one man with six fingers on both hands. Under diseases I have only stated those of which I have personal knowledge. They all contracted the venereal disease away from their own country—in the Gold Coast.

As to the women, they are, on the average, shorter than the men. They are often very comely, and compare in this respect very favourably with the women of other tribes.

Without going into the psychology of the Mende, a few words may not be out of place as to the relationship between shape of head and character. If one is looking for a man with some mental capacity above his fellows, it is certainly desirable to select one with the greatest height above the ears, and mesaticephalic. A man with a long head, and one that is straight on top from front to back, is commonly less useful, even if his forehead be tolerably high. Of course one looks for a high and broad forehead, but even if this feature is not very prominent, a well-curved dome-shaped head is a fairly good indication of intelligence. If, however, the hinder part of the head is under-developed, the lack of energy resulting therefrom makes the individual less useful than he should be. The common feature of the sinking of the forehead between the temporal ridges indicates that the fore part of the brain has not developed fully. A cross with a neighbouring or kindred tribe produces a better brain, and adults who went to school when young do not seem to show this contraction of the forehead so much as the illiterates.

On the whole, the mental capacity of the Mende is by no means low, and they are capable of considerable ingenuity and are resourceful. They have not, however, shown any indication yet of being able to rise to a higher state of development, or of being able to fill positions which other natives of West Africa have no difficulty in attaining. This will probably be a matter of many years, if not of several generations. The reasons and causes of this incapacity do not, however, pertain to these notes.

In connection with the wide range of height of this tribe, a point I must mention is that I have noticed that tall and short men do not readily mix socially if there are

others of a more approximate height to associate with. It may be there is an unconscious feeling that the race is not quite the same, much as in England the social distinction between classes is at bottom racial.

The Mende tribal marks are on three parts of the body—the cheeks, the back of the neck, and down the back.

Those on the cheeks consist of three vertical lines, parallel, and about half an inch long. They are usually very faint, and are optional, as many Mende have none at all. They are made by a series of very small dots. The back of the neck is also marked by a few short lines, but there is variation in them. The third series of marks down the back indicate that the man has been to the Poro bush, and so has virtually acquired full citizenship. There is a main line running from the neck to the base of the spine, and from this are roughly horizontal lines passing under the shoulder blades and along the waist. They are made with small notches nicked out. If a man has specialized in anything in the Poro bush he wears additional marks, *e.g.*, circles round the breasts.

A note I must make is that there seems to be a disposition amongst those who have not closely gone into the subject to regard the whole negro race as dolichocephalic. This is far from being correct, anyhow as far as Western Africa is concerned. All along the West Coast from Sierra Leone to the Niger Delta one can meet brachycephalic specimens. As regards the Gold Coast, where I have had best opportunities of observing, they are to be found among the Northern Territories tribes, most of whom are related to the Moshi. Among the Ashanti also short heads can be found, and I have also noticed a very large number of heads among the sea-faring population of the Fanti Coast, which, if not quite brachycephalic, approached it very nearly.



1. MENDE AND A FEW OTHERS.



2. MENDE MAN (NO. 34) AND A MENDE GIRL.



3 MENDE MAN (NO. 58), FULL FACE



4. (NO. 58), SIDE FACE.

SOME OBSERVATIONS ON THE PHYSICAL CHARACTERS OF THE MENDE NATION.



Serial Number.	Adopted Name.	Own Name.	Town.	Age. 1916.	Height.	Head.			Face.			Head.		Prognathism.	Forehead.			Eyes.			Nose.		Chin.			Ears.			Lips.			Hair.			Complexion.			General Build.			Trunk Compared with Legs.			Shoulders.			Thighs.			Calves.			Notes on Diseases, etc.	Serious Diseases.	Serial Number.																																
						Dolichocephalic.	Mesaticephalic.	Brachycephalic.	Long.	Medium.	Broad.	High.	Projecting Occiput.		Great.	Medium.	None.	Height.			Breadth.			Slope.			Close.	Medium.	Far Apart.	Flat.	Medium.	Prominent.	Receding.	Medium.	Prominent.	Outstanding.	Not Outstanding.	Large.	Medium.	Small.	Thick.	Medium.	Thin.	Face.			Body.			Black.	Brown.	Red.				Stout.	Medium.	Slender.	Long.	Medium.	Short.	Square.	Medium.	Sloping.	Thick.	Medium.	Thin.	Thick.	Medium.	Thin.																	
																		High.	Medium.	Low.	Broad.	Medium.	Narrow.	Receding.	R. Slight.	Not re- ceding.																		Much.	Medium.	Absent.	Much.	Medium.	Absent.																						Black.	Brown.	Red.	Stout.	Medium.	Slender.	Long.	Medium.	Short.	Square.	Medium.	Sloping.	Thick.	Medium.	Thin.	Thick.	Medium.

| 1 | James. | Boma. | Panguma | 33 | 5 4 1/2 | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x | x |

STONE-WORK AND GOLDFIELDS IN BRITISH NEW GUINEA.

[WITH PLATE VI.]

By E. W. PEARSON CHINNERY, Lieut. Australian Flying Corps.

INTRODUCTION.

DURING service with the magisterial staff of British New Guinea from 1909 to 1917, I saw numerous things which convinced me that at some period New Guinea had been strongly influenced by people who differed in many respects from the existing inhabitants. Evidence of this appeared from time to time in the shape of various stone objects which were ascribed by the existing peoples to an earlier race of "another kind." Many of these objects were dug from the ground by ancestors of the present people, but their original use was not known.

Most of them have already been described by ethnologists, and these publications will be referred to throughout my paper by the numbers in which they appear on the list of literature appended.

The purpose of my paper is to describe all objects of unknown origin that have been discovered in New Guinea, and to point out certain features in connection with their distribution which suggest that the objects are evidence of a wide movement that has had a most profound and far-reaching influence on the early cultural development of New Guinea peoples.

In the first section of the paper the objects will be described in groups, but their geographical sequence and relationship will be shown in the table and map at the end of the paper.

The second part of the paper will be devoted to a general survey of the objects, the localities in which they are found, certain peoples of New Guinea and their cultures, and cultures which appear to be associated with the objects.

In the concluding section I shall make general observations on the evidence.

PART I.

THE OBJECTS AND LITERATURE.

Stone Mortars.

- i. Yodda Goldfield. The first mortar is described by Monckton (1, p. 31).

Extracts of his description are as follows: "A remarkable pestle and mortar of plainly great antiquity have been found by some miners in gold workings at a depth of 12 feet below the surface in the Yodda Valley. . . .

they appear to be relics of a forgotten race. No native to whom the recently found articles were shown could make any suggestions as to their original use or purpose, and all agree that it is not the work of any now existing tribes . . . the mortar with the pestle weighed 66 lbs.”

The above pestle and mortar are now in the British Museum. A full description of them has been published by Seligman and Joyce (2) and they are also mentioned in a paper by Etheridge (3, p. 24).

- ii. Etheridge¹ (3, p. 25) also describes and figures a pounding mortar and non-descript implement which were found on Yodda Goldfield. “. . . The mortar weighs 30 lbs. and consists of mica schist. . . .” Etheridge also refers to a similar mortar from the Solomon Islands, figured by Edge-Partington (4).
- iii. About fifteen miles east of the present gold workings of the Yodda Goldfield is a hill known as *Andacota*. The natives of Hunjara told me that a large stone mortar about 2 feet in diameter lies on the summit of this hill: it holds rain-water, which is drunk by parties hunting in the vicinity.
- iv. Seven or eight miles east of Andacota in the village of Egasusu I found a circular stone mortar (Plate VI, Fig. 1); it held rain-water and the natives used it as a mirror. They told me it had been dug from the ground by an early ancestor, but they had no idea as to what its original use had been. They would not part with it “lest harm should come to them.”
- v. In describing some objects found at Rainu on the coast of the North-Eastern Division, Seligman and Joyce (2) refer to a “fragment of sandstone, possibly part of a mortar, from the exterior of which extends a short cylindrical projection.”
- vi. Dr. A. C. Haddon supplied me with a photograph of a mortar and some pestles which he saw in the Museum at Port Moresby, but there is no information regarding them.
- vii. One of the priests of the Roman Catholic Mission at Veipa, Mekeo District, has in his possession a small stone mortar $4\frac{1}{2}$ inches diameter, $3\frac{1}{4}$ inches depth from rim to base, and bowl $2\frac{1}{4}$ inches. It is circular in shape and tapers gently to a flat base. A member of the mission dug it from the ground many years ago, and asked the village people about it. They covered their faces in fear, but afterwards told him that formerly a sorcerer had possessed it. The mortar had given potency to his magic, and as many people died the sorcerer was killed.
- viii. Williamson (5, p. 75) describes and figures a large stone mortar found by him at Mafulu. Its great weight made it impossible for him to take it down

¹ I am indebted to L. W. G. Malcolm, of Christ's College, Cambridge, for this reference.



FIG. 1.—MORTAR IN EGASUSE (IV).

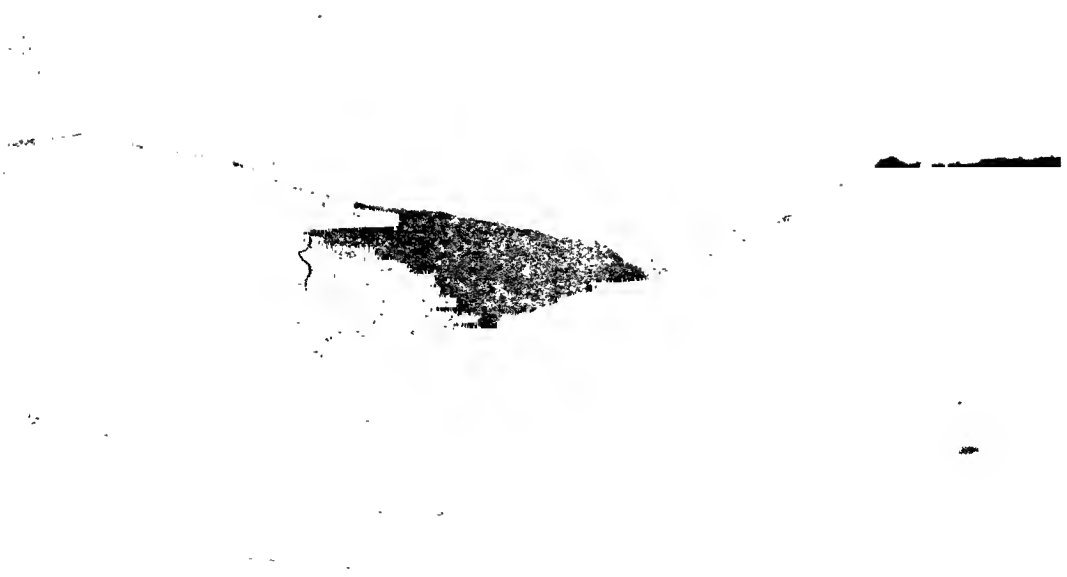


FIG. 2.—WATERSHED OF THE LAKEKAMU.

STONE-WORK AND GOLDFIELDS IN BRITISH NEW GUINEA.

to the coast. Williamson was told by the natives that similar things are found generally on the ridges far from water; the name given for them is *idagafe*. He says: "The natives have no knowledge of their origin or past use, the only explanation of the latter which was suggested being that they were used as looking-glasses by looking into the scummy surface of the water inside them."

The mortar figured by Williamson is of the same shape as the one seen by me at Veipa, a village in the neighbouring coastal district.

Mafulu is situate on the southern side of the Owen Stanley Range, not very far from the Aikora Goldfield, which is on the northern side. The rivers in the neighbourhood of Mafulu have been prospected by white gold-seekers, but the gold found has not justified the opening of a goldfield.

Stone Pestles.

- ix. Aikora Goldfield. Barton (6) describes and figures a pestle of soft stone which was unearthed by miners about 40 feet below the present bed of the Aikora River under 10 feet of alluvial sand and clay. Above the "business end" of this pestle "is carved the body of a bird, with tail depending and wings stretched outwards and forwards; the neck of the bird is long . . . and curved, and terminates in a rather snake-like head, with eyes in relief; the bill has been broken off immediately below the nostrils, which are represented by two small circular pits. . . . The grinding surface of the pestle is somewhat worn and polished, but, having regard to the peculiar elaboration of its shape and the softness of the stone from which it was cut, I am inclined to think that it was probably for ceremonial use."
- x. Yodda Goldfield. The pestle found with mortar (i) and described by Monckton (1).
- xi. North-Eastern Division, Cape Nelson. Barton (6) figures and describes two pestles of volcanic rock found at Cape Nelson in the possession of natives, who regarded them as charms.
- xii. Mekeo district. De Vis (7, p. 32) figures and describes a coarse but very hard sandstone pestle which showed signs of having been used as a grinding instrument. This pestle is said to have been used by the natives as a "sorcery charm." De Vis points out its resemblance to a pestle figured by Powers (8).
- xiii. Murua Goldfield. De Vis (9) figures and describes a pestle or muller of diabase or diorite found "under 3 feet of superficial gravel at the bottom of the same extinct river-bed whence were extracted the fossil bones of dugong, turtle, and crocodile described in the manner aforesaid." De Vis

suggests that this implement served for the reduction of substances to powder and states that the natives of the island declared that they did not know the use of it.

- xiv. Stone pestles photographed in Port Moresby Museum with mortar (vi).
- xv. Lakekamu Goldfield. A granite pestle 18 inches in length with a maximum diameter of $3\frac{1}{2}$ inches was unearthed by miners 14 feet below the surface in wash dirt. It is figured and described by Lyons (10).
- xvi. Murray (11, p. 373) states that part of what was perhaps a figure similar to ix was unearthed on the Lakekamu.

Stone Carvings.

- xvii. Meek (12) found in a village on the "Giriwa" River a carving in stone. It represented a man "a little suggestive of the Buddha images of Asia" with hands crossed on stomach; below the waist it was unshaped.

Murray (11, p. 373) also refers to this figure.

Meek was informed that the natives by placing this figure in the gardens would get a good taro or yam crop.

- xviii. Another stone carving¹ which was said to have been discovered in a village towards the headwaters of the Giriwo (Giriwu) River is figured and described by Etheridge (3, pp. 26-27). This figure is of hornblendic rock; it represents a rude animal figure $14\frac{1}{2}$ inches long by 6 inches wide and weighs 14 pounds. Etheridge says: ". . . If laid horizontally on the back, the phallic nature is self-evident, and I think it much more likely to have been an emblem (priapus or lingam) of that nature."

The Giriwu River enters the sea near Gona village, where pottery fragments (xx) have been discovered.

- xix. Another figure¹ described and figured by Etheridge (3, pp. 24-25) was found on the Yodda Goldfield. It is of clay-stone, 10 inches long, 4 inches wide and 3 pounds in weight, and is "generally speaking, dagger shaped and compressed . . . when looked at on either face there is an unmistakable resemblance to the human form." Etheridge, after pointing out its general resemblance to certain stones in New Caledonia which are connected with fertility, quotes Edge-Partington (13).

Certain carved stone figures have also been found in the Torres Straits and figures and descriptions of these have been published (14).

Fragments of Pottery.

- xx. Gona, Kumusi Division. Numerous fragments of pottery ornamented with incised and impressed designs were seen by me at Buna. Mr. Ernest

¹ For which reference I am indebted to Dr. C. G. Seligman.

Oates, who possesses these fragments, informed me they had been unearthed in the vicinity of Gona village near the mouth of the Giritu River.

- xxi. Rainu, North-Eastern Division. Monckton (1) describes fragments of pottery and incised shells excavated at Rainu. Etheridge (3) and Pösch (15) both describe this pottery, and Seligman and Joyce (2) have figured and described some of the pieces, which are now in the British Museum.
- xxii. Two pottery club-heads found at Rainu are also described by Seligman and Joyce (2) and it is suggested by them that these club-heads were "probably ceremonial."
- xxiii. Dauka Island, Central Division. Fragments of pottery found on this island are also figured and described by Seligman and Joyce (2). The Dauka pottery differs in type and decoration from that of Rainu.
- xxiv. Domari, North-Eastern Division. De Vis (7, p. 34) figures and describes two potsherds with strong well-shaped handles given to him by Captain F. R. Barton. These were suspended from the neck of a man in each of two distinct tribes in the mountains on the headwaters of the Musa River (Domari); the fragments were worn as charms.

Shell Ornaments.

- xxv. In the Rainu excavations were found several shell pieces (*Conus*) bearing examples of incision-work not practised by existing people. Monckton (1) describes these ornaments; they are described as well by Etheridge (3) and Pösch (15). Excellent figures and descriptions of them are also given by Seligman and Joyce (2).

Implements of Opicalcite.

- xxvi. Adze blades and a fragment of discoid club-head found at Rainu are also described by Seligman and Joyce (2).

Obsidian Implements.

- xxvii. Yodda Goldfield. An obsidian implement described by Monckton (1) as a "battle-axe" was discovered in the same creek as the pestle and mortar (i). Murray (11, p. 374) was told that this "battle-axe" was found 70 feet below the surface. It is figured and described by Seligman and Joyce (2).

In a later paper Seligman (16) points out the resemblance between this "obsidian axe or adze blade" and certain (figured) obsidian blades of Rapa Nui (Easter Island), and suggests that it "may well be a relic of the period when the ancestors of the Polynesians were passing through Melanesia to reach their homes in the Eastern Pacific."

xxviii. Misima Goldfield. Seligman and Joyce (2) figure and describe a spear-head of obsidian and a highly patinated adze blade found by a miner while sinking a shaft, at depths of 4 and 9 metres respectively.

xxix. Delta Division. While at Kikori I found in one of the bush villages on Ututi Creek an implement of obsidian about 8 inches in length, with a flat rectangular base about 2×3 inches. The upper part of the implement was rough and rudely chipped, but towards the base it was smooth and polished. It was used for chopping sago pith. The owner informed me that it came from the headwaters of the Kiko River.

Implements of Other Stone.

xxx. Lakekamu Goldfield. On the headwaters of the Lakekamu (Kunimaipa) River I saw two discoid club-heads of granite, one 6 inches and the other 9 inches in diameter. The large one was beautifully finished and polished. In no other part of New Guinea have I seen granite club-heads.¹ Unfortunately, owing to the hostility of the people, I was not able to trace the history of these club-heads.

xxxi. Delta Division. Of the implements seen on the headwaters of the Kiko River the late W. N. Beaver (17, p. 258) says:—"Most of the men carried stone clubs of the disc pattern, but very poor and puny and almost contemptible as weapons; but in striking contrast, their stone axes were of the finest workmanship that I think I have seen. The stone was a milky opaque colour and looked suspiciously like jade. The cutting edge and bevel were as even as if they had been measured out with a pair of callipers."

xxxii. Alabaster Club-head. Murray (11, p. 374) refers to a "peculiarly shaped club of alabaster," the provenance of which he was unable to ascertain.

Implements of Quartz.

Among the relics of a forgotten race must be placed the quartz club-heads which are seen sometimes in various parts of New Guinea.

xxxiii. Kumusi Division. On the narrow watershed between the Kumusi and the Mamba and in the vicinity of the Upper Mamba Valley (Yodda Goldfield) I saw many white quartz club-heads. These were ovoid, discoid, and star-shaped and varied in size, the ovoid shape being about 3 inches in diameter, through the perforation, while others were only about $1\frac{1}{4}$ inches. The small ones were fixed to light sticks and were known as "stone club belong small boy." The discoid shapes were about 6 inches in diameter from rim to rim. Some of the ovoid shapes were "knobbed" and others were smooth.

¹ An unflanged star club-head of granite is described from Torres Straits by Haddon, *Journ. Anth. Inst.*, xxx, 1900, p. 240.

These clubs were the property of "old men," and in every case (about fifteen) I was informed that they had been dug from the ground in their present shape by remote ancestors. It was said that the shape of the objects attracted the attention of the finders, who discovered their suitability as weapons on pushing the sticks through the holes to eject the mud which had collected there; thus the larger ones became converted into weapons, while those which were too small were made into "play" clubs for children (two of the small ones secured by me had not been converted to any use). The locality of these finds is said to be the original starting place of the present stone club industry of the Kumusi Division.

- xxxiv. Western Division. Murray (18, pp. 20-24) saw "some curious clubs" at a village on the west bank of the Fly River about 400 miles from its mouth. "... the head is egg-shaped, very hard stone like quartz, with a hole pierced through it lengthwise in which a handle is fitted. The labour of boring the hole must have been enormous."

Stone Circles¹ and Incised Stone Work..

- xxxv. Etheridge (3, p. 27) figures and describes a slab of basalt of 62 pounds weight, the origin of which is said to be unknown to the natives of Boianai, North-Eastern Division, among whom it was found. It is 16 inches long, 11 inches wide and 6 inches deep. It bears an incised spiral of six whorls $10\frac{1}{2}$ inches in diameter. The natives called the stone *wakima kiru kiru mana* and the incised design *giripipina*.

- xxxvi. Newton (24, p. 171), with reference to stone work in and about the villages on the coast of Goodenough Bay, states:—

"... Stones in and near the houses that had an influence on the life and health and prosperity of the people, sling-stones which had been kept for generations and which gave to others in the bag the power of direction so that they would certainly hit the victim aimed at. At Wedau there is a stone which gives strength and courage for war. From far and near people came to drink water in which chips of it had been boiled. In all the villages there are stones which are revered, and which may not be moved. In the Boianai villages many of them have signs on them, rude circles, chipped concentrically; their presence in the village ensures success to all garden work, a plentiful supply of food, and happiness to the people. . . . There are others, short stunted obelisks stuck in the ground with rude markings. All these are really tabu; they may not be interfered with or trouble will follow. Whence they came no one knows,

¹ Stone circles are said to occur in Australia also. Simpson (20), Brough Smyth (21), Grey (22). (For this reference I am indebted to L. W. G. Malcolm.)

they were here in the time of our ancestors, they remain for ever, what the markings mean no one can say. I suppose should the village be moved for any reason the stones would be taken to a new site. . . . In every village there are large flat stones worn smooth by constant sitting on them, arranged as a sort of pavement more or less circular. Here and there at the outside edge are others, also worn smooth, stuck in the ground with a slight slope outwards from the perpendicular. Here on the *gana*, as it is called, the old men assembled to discuss matters, the oldest having the seats with backs to them. Here strangers would be taken when they came to discuss matters with the old men. Here the old men rested in the evening when the day's work was done."

Seligman (23, pp. 463-466) gives details of these circles and standing stones, and their place in native life. He also describes certain incised designs which appear on some of them, and figures two of the circles. He states that not much could be discovered from the natives regarding the meaning of the incised designs. Some of the stone circles appeared to be connected with cannibal feasts and some of them appeared to be squatting and debating places for the men.

Seligman (23, p. 464) says that heaps of stones used as squatting places for the men are found all over the D'Entrecasteaux group. Murray (11, p. 139) mentions their occurrence in Rossel Island."

Stone Objects from German New Guinea.¹

Neuhauss (19, pp. 136-148) has discovered evidence in late German New Guinea which enables us to associate, not only the objects described by Etheridge, but practically all the material set out in this section with one and the same culture.

xxxvii. Fifteen stone mortars, and some stone pestles were procured in the neighbourhood of the Huon Gulf (late Kaiser Wilhelm's Land).

One of these was excavated in the bed of a river associated with richly ornamented pieces of pottery, splinters of obsidian, old stone axe-heads, and some roughly worked small stones similar to those now used as charms.

Neuhauss states that the natives regard the pestle and mortar in his Fig. 51 as the male and female genital organs of spirits. The pestles in his Fig. 55 play an important part in taro magic, although they are not used for crushing taro.

Neuhauss states: "The inhabitants did not know the use of these pestles and mortars. Undoubtedly the mortars served originally for the crushing of hard substances. Evidence of this lies in the pestles and rims

¹ Brought to my notice by Dr. A. C. Haddon.

of the mortars which are smoothed by long use. At the present day, however, the natives do not crush substances which require such heavy pestles and mortars . . . taro is crushed in a wooden trough."

Neuhauss also figures and describes some stone human figures with remarkable headgear collected in Bukaua; these also were used by the people as charms.

Other stones "of mysterious origin" are described by Neuhauss, all of which played a big part as charms during circumcision and pig-market festivals.

The stone-clubs are said by Neuhauss to "show strong incrustations and traces of great antiquity."

Etheridge (3, p. 28) states: "I think it may now fairly be conceded there is ample evidence of the existence of an extinct, or at any rate former, population in Eastern New Guinea, of a highly interesting nature. Although the information to hand is not sufficient to prove the hypothesis, it is possible that this pottery (xxi) and the buried works of art of the Yodda Valley (ii, xviii, xix) are the productions of one and the same people."

Before passing to the second part of the paper I would like to suggest that the New Guinea objects appear to be similar in many respects to objects associated with megalithic cultures in other parts of the world by Simpson (20), and other writers since his time.

PART II.

SUMMARY OF OBJECTS.

The objects are "sacred" stones, standing stones and stone circles; shells with incised ornamentation consisting of concentric circles, spiral scrolls, and human face representations; fragments of ornamented pottery; stone carvings of birds (with snake-like head), human and animal figures; pestles and mortars of granite, lava, and other stone, in various shapes, some of them carved; perforated quartz implements in various forms, some of which have been converted into stone-headed clubs, and implements of obsidian and other stone not used by existing races.

Distribution.

If the map (p. 291) is consulted, it will be noticed that the objects have been discovered either in gold-bearing areas or in neighbouring coastal regions. Some of the goldfields into which these objects have found their way lie among the mountains of the interior (Plate VI, Fig. 2) in the midst of almost impenetrable jungles, rough broken mountains, precipitous gorges, and dangerous rivers. These regions are inhabited by fierce mountain tribes of short peoples, all of which until recent years were at war with one another as well as with their taller neighbours on the lowlands. Yet it is in such inhospitable regions that some of our objects have been discovered, many

of them below the surface. The existing races are not able to account for them, so we are forced to conclude that they were part of a culture which has failed to survive. Perhaps a brief survey of what is known of New Guinea peoples will help us to determine the nature and effect of this mysterious culture, for it is obvious from its wide distribution that it must have left other traces besides the objects themselves. But since the coastal regions have been subjected to numerous influences in relatively recent times it is in the interior among the mountain tribes that the purest traces of the mysterious culture should be found.

New Guinea Peoples : Existing Cultures and the Objects Generally.

Haddon (25) points out that probably two varieties of woolly-haired peoples inhabited New Guinea in very early times, pygmies (Negritoes) and a taller variety known as Papuans. Speaking generally of negritoes (26, p. 316), he says :—"The negritoes are collectors and hunters, and never cultivate the soil unless they have been modified by contact with more-advanced peoples."

Williamson (5) and Pösch (27) have reported negrito characteristics in existing British New Guinea peoples. The stature of the Mafulu investigated by Williamson (5) is, to my knowledge, a type of that which is found in almost any mountain people from Mount Clarence to Mount Chapman. Seligman (28, p. 329) gives some measurements taken by Dr. W. M. Strong in the neighbourhood of Inauvorene, Inava River, which show an average stature of 58½ inches. Unfortunately I took no measurements of the mountain people I myself came into contact with, but I am familiar with the type from Mafulu and Inava, and have no hesitation in stating that so far as stature is concerned it is the general mountain type of British New Guinea—i.e., a mixture of short and taller peoples. The skin colour of the mountain people, however, differs considerably. In the Kumusi headwaters, sometimes in the same village, it varies from a dirty yellow to chocolate. But the physical characteristics undoubtedly point to a mixture between short and taller peoples. And in the cultural life of these mountain Negrito-Papuans we see other definite traces of contact with peoples of different culture. These are particularly noticeable in agricultural life, and in practices associated with the dead. The mountain tribes inhabiting the regions in which our objects have been discovered are keen and skilful hunters, as their suggested negrito origin would lead one to expect, but, in addition, their life is devoted to the cultivation of food plants, such as yams, sugar-cane, sweet potatoes, tobacco, ginger, cucumbers, taro, beans, and in some districts, the pandanus. Intimately associated with cultivation and fertility are ideas and practices connected with stone objects and serpents. From time to time they abandon a more or less isolated family group existence and indulge in elaborate ceremonies connected with the initiation of their young people, in some of which bullroarers and flutes are used. These, too, are definitely connected with the production of food. In some of these agricultural districts

a special method of irrigation has been recorded. Perry¹ (29) has already drawn attention to its occurrence in certain places. Staniforth Smith (30) found it on the headwaters of the Kiko River, and Beaver (17, p. 262), describing its occurrence there, states: "There was one particularly noticeable point about their garden work, and that was the excellent and extensive drainage system which was carried out with due regard to levels, the whole of the water emptying into the Sambrigi Creek which flowed down the centre of the valley; . . . another noticeable feature was an equally fine system of stone weirs and channels made in the Sambrigi Creek for fishing purposes."

I (31, p. 62) found terraced beds of yams on the mountain sides at the head of the Lakekamu (Kunimaipa) River.

Newton (24, pp. 124-5), who is also quoted by Perry, shows that in the vicinity of Bartle Bay taro is grown in terraced beds on the hillsides; dams are built, and the water, by means of canals, is led for three or four miles round the ends of ridges and along the sides of them—it is conveyed across gullies by means of aqueducts of hollowed logs and so is brought to the gardens. Newton figures dams and aqueducts, and also states:—

"Who originated these systems of irrigation no one knows. To all inquiries the answer is given, 'Our ancestors did it.' How long ago, no one has any idea; but rough as some of the work is, it shows a good deal of thought and skill in overcoming engineering difficulties. The men who thought out and directed the erection of the aqueduct at Gwagwamore, and the one who first carried the water round the cliffs on the bank of the Wamira River were certainly benefactors to their race, and far ahead of the present generation in inventive faculty and in skill."

Many of these mountain tribes also have elaborate practices in connection with the dead. Elliot Smith (32) has already drawn attention to the occurrence of mummification in certain parts of British New Guinea. D'Albertis (33, p. 101) figures and describes two embalmed bodies found by him on the headwaters of the Fly.

Beaver (17, p. 152) refers to an occurrence in the district between the Fly and Strickland Rivers of "the same mummified bodies laid out on platforms in the villages, and the same extraordinary life-sized heads of stuffed human skin, such as have been described by the earlier explorers." Beaver (17, p. 258), referring to the tribes on the headwaters of the Kiko, states: "What immediately struck the eye was the habit of wearing round the neck a dried human hand with the flesh and nails adhering and complete. To the touch the hand was quite pliable, and it had evidently been smoke-dried in much the same manner as the Tugeri prepare heads." Beaver concludes that the hands are those of enemies. He also noticed in this district "many men wearing necklaces of human bones and jaws," which he concluded were those of relatives. He goes on to say that the upper Kiko people, when

¹ The investigations of Mr. Perry were brought to my notice by Dr. W. H. R. Rivers.

making signs of hostility, instead of following the orthodox practice of drawing the hand across the throat, did the same to the wrist.

On the headwaters of the Lakekamu River and in the country around Mount Yule I saw women wearing over the breasts the dried arms and legs of relations; while others carried, suspended in the same way, the finger bones, pelvis, etc., of relations. I also found women in this district carrying the skulls and bones of relations in their netted bags, a practice which I noticed also in the bush villages near Kikori.

I was told by Bakeki of Kurereda that in the Kumusi Division (Aiga tribe) the corpse was formerly placed on a platform over a smoking fire, incisions were made to aid the escape of fluid, which, as it fell, was, in some cases, rubbed into the bodies of the mourners. Later the smoke-dried corpse was wrapped in bark-cloth and kept on a platform until certain rites were performed, when it was buried in the village within a small fenced enclosure under a roof of palm leaves.

On the Wharton Range, north side, eight years ago, I was told that the body was allowed to dry in the sun and mourners stood beneath and anointed themselves with the fat which dropped from it. The skulls were afterwards kept in the houses, and on feasting occasions, painted and decorated as in life, were held by dancers during the ceremonies.

It would appear that there has been an important movement of immigrant cultures amongst these people, and that while its general influence has been widespread, more definite results have occurred in some places than in others.

I shall refer to the people who introduced these cultures as the "immigrants."

So far, the British New Guinea evidence reveals no definite tradition of such a people, but Keysser, in his account on the Kai tribe, a people of mixed Pygmy and Papuan descent (probably a similar people to our mountain people), who inhabit a district inland from Huon Gulf, not far distant from the locality in which stone objects (xxxvi) were discovered, relates a belief which might well refer to a people such as the immigrants. The following are brief extracts from Keysser's memoir (Neuhauss (34), p. 156):—

The *Nemu* were demi-gods who inhabited the world before present race, stronger and more powerful than men; they made men what they are, and put a black skin on some, and a white on others. They discovered edible fruits, first planted fields, built houses. At first a whole bunch of bananas ripened at once, the *Nemu* altered this and made the fruit ripen gradually. Also they stopped houses moving about from place to place as they formerly did.

At first it was always day; the *Nemu* told the sun to go down and give them time for rest and sleep.

In short, *Nemu* settled mode of life for man; natives always answer, "The *Nemu* did so, and so do we."

The *Nemu* were turned into animals or into blocks of stone at death, and great floods destroyed them all.

The beliefs of the Kai also include a number of ideas regarding the sun and moon and their influence on gardens. The telling of tales is associated with horticulture, for crops are stimulated by calling to memory the *Nemu*, primitive beings to whom field produce is traced.

An interesting connection between serpents and the origin of food growth appears in the story of "The Monster Snake," the several pieces of which when severed fell and took root, sprouted and formed yam tubers (p. 185).

The beliefs of the Kai appear to support the view already suggested that ideas associated with agriculture and preservation of the dead were part of the culture introduced by the immigrants.

Elliot Smith (32) and Perry (29) have pointed out that special methods of agriculture and preservation of the dead are associated with megalithic cultures in other parts of the world, and the evidence appears to show a similar association in New Guinea. But since the New Guinea evidence suggests that these cultures were introduced at a time when the country was inhabited by simple people of rude cultures, we must examine the movements from Indonesia to trace the immigrants, for according to our present knowledge the cultures of New Guinea have received their stimuli from that region.

The first great migration to be considered is the one regarded as Pre-Dravidian which, among other things, is believed to have exterminated, or amalgamated with, the earlier woolly-haired people of Australia (25). How far this movement influenced New Guinea is not known. In any case the absence of agriculture among the Australians, who are regarded as essentially Pre-Dravidian, makes it probable that whatever influence the Pre-Dravidians may have had in New Guinea, the introduction of agricultural ideas was not part of it.

The next great movement into the West Pacific was one which gave to certain black, woolly-haired natives the Austronesian language and some elements of higher culture, that of the Proto-Polynesians. This movement was followed by others (25).

The immigrants probably formed part of these movements. Seligman (16) has already suggested that one of the implements (xxvii) is a relic of this period. This view is supported by the resemblance between some of the New Guinea objects and certain of the pestles, mortars and stone-headed clubs and other stone objects of the ancient Hawaiians described by Brigham (35), and the stone implements and carvings of various parts of Oceania described by Nuoffer (36) and Parkinson (37).

The New Guinea evidence undoubtedly forms a connecting link in this vast chain of movements from Indonesia into Oceania. But there is one troublesome fact which has to be explained, and that is the mysterious distribution of the New Guinea objects. What led the immigrants into the formidable regions of the interior in so many places? Nothing short of extreme pressure or the highest inducement

could account for the presence of people in the very interior of this, one of the most inhospitable countries in the world. The existing races are there simply because they cannot help themselves, while the white race is attracted there by gold. We can reasonably assume from the evidence that the immigrants penetrated the interior at various points entirely of their own free will. Had they been searching for land they would surely have remained in the fertile coastal region. What, then, did they seek?

Perry (38) states that there is a definite relationship between the distribution of megalithic monuments and ancient mines and pearling beds in other parts of the world; the regions from Indonesia to Easter Island are especially included in his survey of pearling beds. Pearls certainly occur on the coast of New Guinea in every locality which has yielded traces of the immigrants, and I have already pointed out in which of them gold occurs. But it is when we come to examine Perry's work on Indonesia (39) that the relationship of the New Guinea cultures to Indonesia is most strongly suggested.

Perry states that the culture of indigenous peoples in certain localities of Indonesia has been profoundly affected by "stone-using immigrants," who wandered about the country in a mysterious way, settling here permanently, there temporarily, and avoiding other places altogether. Perry goes on to say that the stone-using immigrants appear to have been people well acquainted with the working of gold, etc., who were so attracted by it that they settled in places where they found it, and left in some localities terraced irrigation and megalithic monuments as signs of their presence.

Of the Igorots who practise terraced irrigation and work gold mines it is said "they pick out and remove the ore which having been crushed by a stout rock in certain large receptacles fixed firmly in the ground and with other smaller stones by hand, and having reduced the ore to powder, they carry it to the washing place." Perry attributes to the influence of the "stone-using immigrants" ideas about fertility and soul-substance, the use of phallic symbols, and certain other practices and beliefs.

If Perry is right, and if the movements of the "stone-using immigrants" in Indonesia were related to the expansive movements which swept across Oceania, leaving traces in New Guinea as they passed, the motive for the mysterious distribution of the immigrants' cultures in the gold-bearing regions of New Guinea is explained.

It will be obvious to the reader that the New Guinea pestles and mortars must have been used by those who introduced them for an object not understood by the indigenous inhabitants, else why should their original use have so completely disappeared? Neuhauss (19) states that they were evidently used for crushing heavy substances. Monckton (1, p. 31), in describing the granite pestle and mortar (i) found by miners beneath the surface of the Yodda Goldfield, states:—"The miners

had an idea, caused by the place in which it was found, that the article was a 'dolly' for crushing quartz, and had been so used by a former people." After giving the view expressed by the miners as to the use of the Yodda pestle and mortar, Monckton states:—"To my mind it is much more likely that the mortar was used as a mill for crushing corn, but against that one knows that corn has only been introduced into the Yodda Valley in the last few years, and is even now never crushed, but always roasted whole."

Wilkinson¹ (40, pp. 229-232) shows that pestles and mortars and grinding stones similar to those now used in Egypt for pounding corn and grain were used in ancient gold mines for reducing quartz to powder.

That the New Guinea immigrants also had some interest in quartz is proved by the discovery of the perforated quartz "club-heads," some of which were unearthed by ancestors of the present race and converted into stone clubs. The present inhabitants of New Guinea, so far as I know, do not make club-heads of quartz, partly because they do not work with quartz, but mainly because pebbles of other stone better suited to their needs occur abundantly in every river-bed. Therefore, even if they could work in quartz there would be no object in wasting time and labour on this material when better stones were available for their purpose. Why, then, did the immigrants search for quartz?

Observations on the Evidence.

The objects discovered in New Guinea and the evident influence of those who introduced them are subjects worthy of intensive study in the field. Until this is done no definite conclusions regarding the identity or chronology of the movements which introduced the cultures can be established. But, nevertheless, the evidence suggests to me certain processes by which the cultures could have been distributed once the immigrants reached New Guinea, and a general outline of these may help future investigators, particularly those who are not familiar with the condition of the interior.

Before the arrival of the immigrants the interior of New Guinea was probably inhabited by short woolly-haired people (negritos), and the coastal regions by taller woolly-haired peoples. The negritos were probably nomadic hunters and collectors, but the coastal peoples may have lived in a more or less settled condition in the sago swamps. Their food was probably the plant and animal life of the jungle and waterways, and their method of cooking would demand no utensils but the sago leaf, bamboo or ashes. The cultural and material life of both peoples would be simple and rude.

Then came immigrants, with arts in stone and clay, systematic methods of agriculture, and elaborate practices and beliefs.

¹ Dr. C. G. Seligman brought this authority to my notice.

Probably the fragments of pottery and standing stones mark their former settlements. As a result of contact certain cultures of the immigrants would become distributed among the backward peoples, but probably the earlier people adopted only the practices of which they were in need. The most important of these would be agriculture, and with agriculture would be absorbed a series of ideas and practices connected with fertility, one of which might have been a belief that the productivity of cultivated plants was controlled by spiritual agencies. If that were so the acquisition of practices connected with the dead, such as preservation, would naturally follow. Then as agricultural life developed it is possible that pestles, or other immigrant things of which the use was not known, might also be employed by the backward peoples as garden charms, in the belief that objects associated with immigrants would be imbued with their virtues. As an illustration of a similar belief, I saw natives in the interior wearing breast ornaments of pieces of kerosene tin in the belief that the tin would endow them with strength and fearlessness, the characteristics of a white miner who had been in their district. Had those people been undisturbed for some generations, the tin and its virtues would have persisted, though the story of its origin might have disappeared.

As the immigrants moved into the interior they were probably accompanied by coastal men, and so the short and tall woolly-haired peoples would come in contact, and in some cases fusion would probably follow. A result of this would be the mixed physical types seen in the mountains to-day. Useful cultures would be distributed by those primarily influenced among others with whom they afterwards came in contact, and during such secondary processes and later infiltrations, modifications to suit the needs of those who had acquired it might entirely change the original character of a culture. Such a process of secondary distribution, however, would not account for objects found *in situ*, such as the pestles and mortars of the goldfields, for they were obviously not understood and not needed by the woolly-haired peoples.

It also seems probable that the arts of stone club and pottery making arose out of contact with the immigrants or their cultures, though evidently the pottery makers of the present day have not acquired the high technique of the immigrants' art. As already suggested, stone club making in the Kumusi Division may have arisen out of attempts by ancestors of the present race to imitate the perforated quartz implements of the immigrants. I was informed by the inhabitants of the Kumusi Division that before Government control was established the knowledge of stone club making was limited to a small group of men near the Yodda Goldfield, but as the influence of the Government brought all people together in a friendly way the art was introduced into other districts; it is, in fact, to my knowledge, still extending.

What induced the immigrants to penetrate the interior is, I think, strongly suggested by the pestles and mortars and their discovery in goldfields. Many of them

are eminently adapted for the purpose of crushing stone, and I feel strongly inclined to support the view expressed by the practical miners of the Yodda Goldfield (p. 285). The peculiar distribution of objects and the cultures I have associated with them, and also the general characteristics of the peoples of the interior, could have resulted from a series of prospecting expeditions into the interior by the immigrants and woolly-haired peoples of the lowlands; a similar process of culture-distribution and fusion is in fact in operation to-day, as a result of the movements into the interior of white miners and their coastal labourers in search for gold.

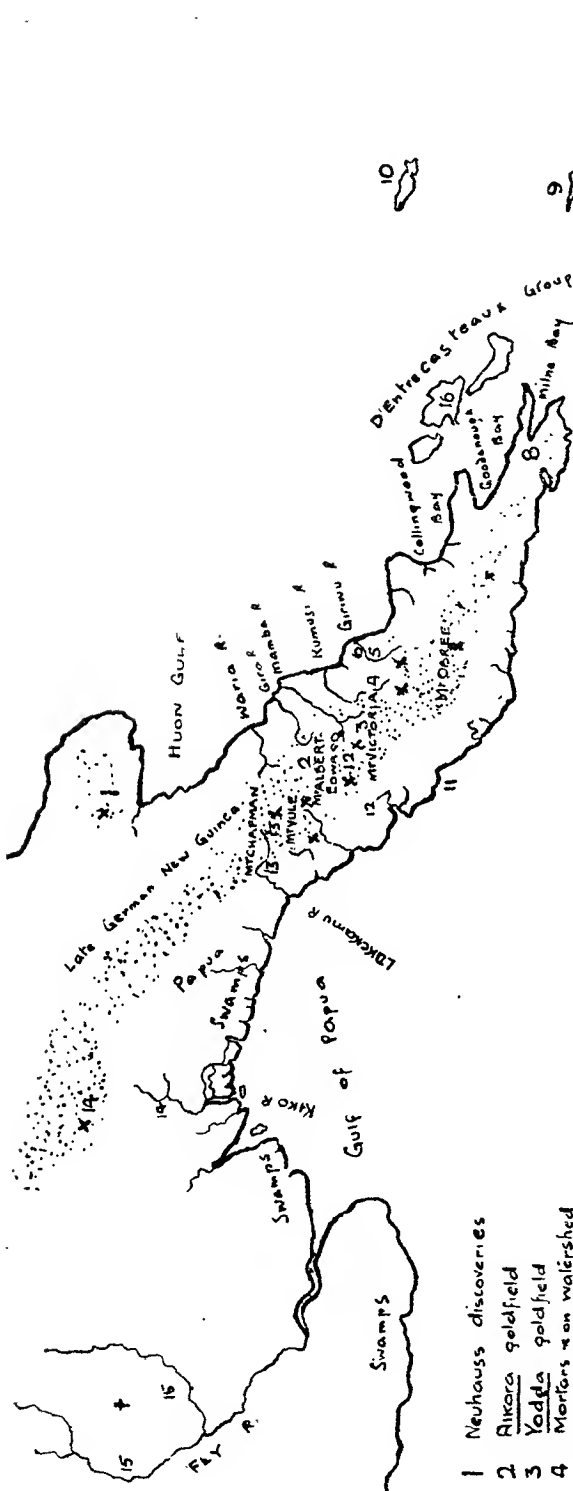
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Table showing Distribution of Objects, etc., in British New Guinea.—Continued.

Location of Discoveries in sequence, beginning at the most Northern Point.	Their geographical relationship to gold-bearing areas.																						
	Mortars.	Pestles.	Obsidian Axes.	Other Obsidian Implements.	Preservation of Bodies (mummification).	Preservation of Hands.	Preservation of Heads.	Preservation of Limbs.	Preservation of Skulls and Bones on Dead.	Stone Circles.	Standing Stones.	Sacred Stones, with Incised Designs.	Ideas of Stones connected with fertility.	Quartz Club Heads.	Fragments of Pottery.	Pearl Beds.	Phallic Symbols, Terraced Cultivation and Irrigation.	Irrigation by means of Dams, Channels and Aqueducts.	Traditions suggesting Immigrants.	Carved Figures in Stone.	Incised Shells.	Pottery Clubs.	Implements of other Stone not used by existing Peoples.
Murua Goldfield	+	+	:	:	:	:	:	:	:	:	:	:	:	:	+	:	:	:	:	:	:	:	:
Dauka Island and Port Moresby	+	+	:	:	:	:	:	:	+	:	:	:	:	:	+	:	:	:	:	:	:	:	:
Mekeo District and Mafulu	+	+	:	:	:	+	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:
Lakemau River Goldfield and Headwaters	:	+	:	+	:	+	:	:	+	:	:	:	:	:	:	:	+	:	:	:	:	:	+
Kiko River ..	:	:	:	:	:	+	:	:	+	:	:	:	:	:	:	:	:	:	:	:	:	:	:
Fly River ..	:	:	:	:	+	+	+	:	+	:	:	:	:	+	:	+	:	+	:	:	:	:	:
Ferguson Island	:	:	:	:	:	:	:	:	:	++	:	:	:	:	:	+	:	:	:	:	:	:	:
Rossel Island ..	:	:	:	+	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:	:



Appendix "B"

Map shewing distribution of Objects

in Appendix "A"

1. Neuhavss discoveries
2. Aikara goldfield
3. Yadga goldfield
4. Mortars on watershed
5. Girinyu river
6. Gona village
7. Rainu village
8. Ginsara goldfield
9. Misima goldfield
10. Murua goldfield
11. Dauka Island
12. Macula and Meko
13. Lavekamu goldfield
14. Kino discoveries
15. Fly river
16. Fergusson Is
17. Rosgel Is.

Mountainous country x Short peoples referred to

SOME PERSONAL EXPERIENCES IN BRITISH NEW GUINEA.

By W. M. STRONG, M.A., M.D., F.R.G.S.

I. INTRODUCTION.

WHEN I was first asked to read a paper before the Institute I was very much inclined to decline the honour on the ground that I had not been primarily engaged in anthropological work for many years. However, it occurred to me that I had spent a long period living in intimate contact with a Stone Age civilization both as a medical man and as an administrator of the law, and that perhaps a paper from such a one would not be without interest to the Institute. I may add that I have always taken great interest in native modes of thought, and in the linguistic methods by means of which such are expressed. I would also like to record here my very strong opinion that a knowledge of, and sympathy with, primitive modes of thought are very essential if the best practical work is to be done, either as a medical practitioner or an administrator of the law in countries still in a state of primitive civilization.

I intend to base this paper primarily on my own personal experiences, which have occurred in the ordinary course of my work. In one particular such experiences are the more valuable, even from the point of view of the ethnographer, for they are the more likely to reveal facts and beliefs which really affect the lives of the people concerned, and not beliefs which are merely academically held, or views which are put forward to explain some inconsistency in native customs, after such inconsistency has been pointed out by an ethnographer.

I also intend to call your attention to any underlying theory or motive which appears to me to be discernable in relation to the facts observed.

There are two districts of British New Guinea with which I am more particularly acquainted. The first is the region on the south coast between Port Moresby on the east and Cape Possession on the west. The second is the area of the north-east coast in the neighbourhood of Cape Nelson. The first district is essentially a Melanesian area. The southern part of the second is also mainly Melanesian, while the northern part is a non-Melanesian area in which the Binendele type of language is spoken.

The natives on the coast near Port Moresby are usually called Motuans. Their language, in a somewhat corrupted or "pigeon" form, is becoming a means of communication between police, prisoners and other much-travelled natives all over the territory. Some years ago I learnt enough of this language for ordinary purposes, and it has been by means of it that most of my information from natives has been collected.

II. MAGIC.

I shall first deal with what is usually called black or evil magic.

In New Guinea there are at least two quite distinct methods of performing this kind of magic.

The essential part of the first kind of magic is that something which has been in intimate contact with a person is obtained by the magician. This "something" is then placed by the magician in contact with some magical medicine, when it is believed that the person will get sick and may perhaps die.

Thus natives fear to leave fragments of their nails or hair about lest a hostile magician may get hold of them and cause sickness or death.

I have said that such hair, nails, etc., are placed in contact with "medicine." You will naturally inquire what this medicine is. It is mainly, if not always, some kind of vegetable product known only to the magician and thought to be able to produce the desired evil effect. The ordinary native usually says he does not know what such medicine is; while the magician usually avoids giving any definite information, and says he got it from a neighbouring tribe.

Accusations of such magic were extremely common in the Mekeo district on the south coast some fifteen years ago. As examples of the kind of material used I may mention that a small fragment or two off a woman's grass petticoat, or the fibrous part of a piece of sugar-cane after it had been chewed and spat out, are very commonly used. I remember once chewing some sugar-cane in an unfriendly village, and a very loyal village policeman from Waiuan village, on the north-east coast, simply insisting on the collection and hiding of the fibrous material I spat out. He feared that the unfriendly village people, who had deserted their village on our approach, would be able to do me harm if they found such material.

Another instance I know of occurred at Kerema in the Elema district on the south coast. A native came to me and quite seriously complained that another native had killed his wife by collecting some sand out of her foot prints, and had then placed the sand in a small bamboo with the requisite medicine. A belief of this kind might obviously give rise to a dislike of strangers, whose friendly feelings might be doubtful.

It is often, if not always, thought advisable to keep this mixture of an article of intimate contact with the "medicine" near a fire for the magic to act efficiently. In one case on the north-east coast a Mokuru native suffered from an obstinate ulcer on his arm. Whenever the ulcer tended to get worse he would come and try to persuade me to arrest the suspected hostile magician. His view of the matter was that when the magician wanted to make the ulcer worse he hung the bamboo containing the article of intimate contact with the "medicine" close to the household fire, and that the ulcer would only heal up if the magician was made to throw the mixture away into a stream of water. His idea clearly was that as

the mixture became hot so would the ulcer become hot, inflamed, and get worse. I have noticed signs of a very similar belief on the south coast, including the inhibitory action of water.

New Guinea natives in their primitive condition will hardly admit that a death can occur apart from some human agency. Perhaps at some former time deaths from the violence of an enemy were so common that they performed an act of hasty generalization and inferred that the exceptions are only apparent, and that in such case some hidden means were employed. However such an idea arose, it certainly exists in New Guinea very widely.

Accepting that the native ascribes sickness and death to a hostile magician, the next matter to settle is as to who the magician is. Usually it seems that some one who is likely to have had a grievance against the sick man is thought of. Quite probably the individual suspected has been performing magic with evil intent, or perhaps inducing another native reputed to be skilled in magic to do so. Quite possibly hints to this effect may have been given. In some cases, I quite believe that the magician does actually cause sickness and death indirectly, by causing so much fear that ill-health and susceptibility to illness may follow.

The natives as a rule can give no very logical reason for suspecting a given magician. In one case at Gaile, on the south coast, the statement of the dying man that so-and-so had caused the illness was thought to be sufficient evidence. On the north-east coast around Mukawa a form of divination was used. The dead man was held by four friends on a sort of stretcher and the name of suspected persons uttered. When the right name is called the dead man "shakes." Further north, among the Maisin, spears are thrown at a village coco-nut tree. As each spear is thrown the name of a possible hostile magician is uttered. When the right name is called the spear shows it by shaking energetically as it strikes and pierces a coco-nut tree. The same people were inclined to kill the first stranger they saw after a death occurred; but I could never gather that they considered him the murderer.

While I have spoken of this native belief as belief in "magic," we must remember that it really is not magic from the native point of view. From his point of view it is just as natural for a person to be killed by treating his hair after it has been cut off, as it is to kill him by giving him a grain or two of strychnine.

I have only come across this form of magic amongst Melanesian-speaking tribes, or amongst non-Melanesian-speaking tribes who have been in close contact with Melanesian tribes. In one case a Binendele-speaking native of the Okein tribe, when accused of performing this kind of magic, protested that he certainly was not guilty, because neither he nor his people made "medicine" in this kind of way.

The second kind of magic is performed by putting some "medicine" in such a place that an enemy will touch it or perhaps that food will come into close contact with the "medicine." The following is a typical instance. A policeman at Port Moresby had a bad wrist. From his point of view it was caused by two Koiari

natives being refused as police recruits. They then made the requisite "medicine," apparently not to be distinguished from ordinary sticks, placed it on the footpath, with the result that the policeman touched it and his hand became bad as a consequence.

A Binendele instance is the following. I was on an out-station in the Mambare Division, where the officer had a cook from a distant part of the country. The Binendele police accused the cook of trying to poison his master, because a small bottle with some powdery substance was found in the kitchen ashes. The bottle was probably only a small discarded European medicine bottle, and the powdery substance only ashes, yet the Binendele thought that it was magic powerful enough to in some way influence the food the magistrate was to eat and so kill him. Likewise in another case, strong protests were made because I placed some native "medicine" on a plate I was afterwards going to use as a dinner plate.

This second form of magic appears to be primarily a non-Melanesian method of making magic.

It should be observed that in the above two kinds of magic there is no kind of ghost-like or spirit agency involved, at least, as far as present-day native ideas are concerned. The magician is always a present-day living native. In the Mekeo district, on the south coast, the prevailing belief was that the only way of rendering an evil magician harmless was to kill him. If he went to gaol he was only temporarily harmless, presumably because he would not have facilities in gaol for performing magic. As regards a further variety of magic, which I am about to describe, the question is not so easy to settle.

Of this type of magic I will give a concrete instance which occurred on the south coast. A girl was sick in a village from phthisis. It was alleged that a sorcerer from Mou had visited her. He presumably performed magic there of the second type, and yet it was acknowledged by all that he was all the time at Mou, some miles from Siria, where the girl was. It was obvious to me that the magician could not be in two places at once. It seemed equally obvious to the natives that he could. Moreover, it was alleged that a footprint under the house was proof positive, because it was large like the footprint of the magician. The natives concerned were Melanesian-speaking; but the method may have been borrowed from non-Melanesian neighbours.

Another instance occurred at Cape Nelson. It was alleged that a native had been driven into a state of maniacal excitement because a brother miles away at Ioma had come and thrown a stone at him. The stone was produced—apparently identical with hundreds of other small stones lying around. It was admitted by all that the brother was miles away at Ioma, but at the same time contended that he had come and thrown the stone. I have come across similar ideas among the non-Melanesian-speaking people inland from Cape Vogel, and among the natives of the Barigi district. In the latter case a native took to living in a tree-house to avoid the magicians.

In the Mekeo district some stones were held to possess a dangerous magical property. There was one such stone at the old Mekeo station. I have known a Solomon Islander police sergeant scatter a whole crowd of Mekeo natives by picking up the stone and chasing them with it. The Solomon Islander was proof against such local superstitions. On another occasion I was told protests were made against taking such a stone into a boat, on the ground that the boat would surely sink. Why these stones should have this evil property I do not know. They are simply plain ordinary rounded stones.

Another very generally held Mekeo belief is that some magicians have control of snakes, and that they can make a poisonous snake go and bite a particular man. Even some Europeans seem to have been half convinced as to the reality of this power.

On the south coast the daily occupations of the natives were and even still are largely influenced by magical beliefs, and much the same probably exists on the north-east coast, although I never inquired so fully into it. The magical and non-magical methods taken to ensure success in hunting, fishing and husbandry are much mixed up. At basis the magical idea seems to be that success may be obtained by imitating the desired result, *e.g.*, burying a stone to represent a potato when potatoes are desired; or by verbally in some way stating the desired result, as by proclaiming over a hunting area that it is the home or village of kangaroos, so that many kangaroos may be found when it is hunted over. Likewise giving a spear a "thorny name" makes it pierce well, or coating it with red makes it draw red blood easily.

A curious belief is the following. If some food is stolen and given to a young dog, and if the owner of the food gets very much annoyed and "fierce" in consequence, his fierceness will pass into the dog and it will grow up a fierce animal and courageous, as in attacking the wild pig. An instance of this came before me as a court case of stealing.

Rain-makers exist both on the south and north-east coast. When rain does not come the rain-maker is blamed. In one such case a rain-maker was arrested and brought to me. His account was that after a long period of drought a cloud appeared which looked like rain. He stood forth on a hill, the centre of an admiring crowd, and did his best by making a fine spray of saliva come from his mouth on the usual principle of imitating an effect desired. However, his account was that he had done his best, but that the south-east wind proved too strong for him and blew the cloud away.

On one occasion I sent two police on a message to Buna Bay. One belonged to the Okein tribe and the other to the Gaina tribe. The Okein are typical Binendeles and the Gaina people a somewhat aberrant tribe, with clear Binendela affinities. They went by canoe, and on their return a storm delayed them at Pongani. One therefore went and arrested the local storm-maker. A

short while after the other policeman decided to release him on the ground that of course if the storm-maker was kept handcuffed he would not let the storm subside and they would never get away.

Fifteen years ago the Port Moresby native was very unwilling to tell you his name. He always got a friend to tell you his name. Possibly there was some magical idea at the back of this. The name and the individual are closely identified in native thought. At the present time names are given without much reluctance.

The Port Moresby native was also very unwilling to wake a sleeping person. I see no reason for assuming that this was because he feared the returning soul might not get back. Perhaps it was only because it would be so contrary to his customary polite greeting, "*Ba mahuta*," that is, "May you sleep."

III. GHOSTS.

Ghosts and spirits do not figure very prominently in native beliefs,¹ but some sort of belief in ghosts does occur, of a very vague and ill-defined nature.

It does not seem that there is ever any fear of the ghost of a dead relative. The native has a most intense desire to keep the remains of his dead relative near him. The old custom on the coast, both on the south and on the north coast, was for a dead body to be buried in or under the house or in the village. The government have forcibly compelled the natives to give up this custom. At Maiva, on the south coast, it once became the custom for the natives to openly bury the body in the appointed cemetery, and for them to secretly exhume it afterwards and to bury it in or under the house. In Mekeo it became the custom for the natives to go and live for two or three weeks in the cemetery after a relative had been buried. Special houses were built in the cemetery for this purpose. In the North-Eastern Division I found similar sentiments existing.

The native usually places some belongings of the deceased near the grave. The Mekeo natives were anxious that the cemetery shall not be liable to be flooded because "they do not like their relatives to be in the wet and cold." I could never find in all this a belief that the ghost would resent any lack of proper treatment, but merely the continuation of the kindly way in which they previously regarded their relatives when living.

Often the ghost is vaguely thought of as going to a hill. In a Melanesian-speaking village, south of Cape Nelson, I saw food put on the grave. I was told that the dead man stood in a particular spot, saw the food and was pleased, and then went away, where they did not know. No sign of a belief that any "essence" of the food was consumed by the ghost was found, nor any belief that the "essence" of food or weapons accompanies the wandering ghost on his journeys. Personally I think these ideas are less primitive than the ideas of the New Guinea natives.¹ In

¹ At least, as far as the areas under consideration are concerned.

the Namau district the ancestors were, I am aware, called upon at the beginning of a cannibal feast to come and see the good feast their children are preparing. The Namau people live at the head of the Papuan Gulf to the west of Cape Possession and the districts specially under consideration.

Feasts in connection with the dead are, I think, pretty well invariably held in New Guinea after the death of a relative in both districts under consideration.

In one case I know that a native was much frightened by seeing the ghost of a European, and even saw "many" of his ghosts. This took place during the initial stage of an attack of malarial fever in the case of a Binendele native.

From the native point of view there are also spiritual agencies which take possession of people. Thus an explanation of extraordinary behaviour may be: "I did not say so; a *dirava* came inside me and said it or did it." *Diravas* are known to walk about, and I have even known police want to fire their rifles to frighten them away. In one case a Binendele clearly seem to think that some flying foxes might be of *dirava* nature.

Dirava is the word usually used for any kind of ghost-like or spiritual agency when speaking the colloquial Motuan used by police and much-travelled natives.

On the south coast, at Yule Island, a very common idea is that in certain wet places there is a *dirava* which makes people sick if they go and drink the water or live there, and that rheumatic-like pains are caused. Can it be that the natives have observed that rheumatism is made worse by cold and wet, or that fever lurks in wet places? When the present government station was formed on Yule Island I was quite seriously warned by them that the site chosen was inadvisable, because there was a *dirava* there in the spring which would cause sickness.

The Melanesian-speaking natives of the south coast very commonly fear, or at least dislike, contact with a dead body or a skull. I think the feeling is really one of æsthetic repugnance, much as exists in the case of Europeans. Perhaps there is an underlying feeling that the "deadliness" which has caused the death may reside still in the body or bones and may be transferred to others by contact. Non-Melanesian natives very commonly used to keep skulls in their houses. I believe these skulls were usually those of friends. Further west in the Western Division, I hear there is real head hunting, with the preservation of the skulls of enemies.

There are some indications of a similar custom in some of the islands at the south-east end of New Guinea.

On one occasion I was about to cross the main range of mountains which form the backbone of New Guinea, and was travelling from the Musa to the Keveri Valley. A native, trying to persuade me not to go, said: "On the other side of the range they are not men (*taunimanima*), but ghosts (*dirava*) who, like birds, live on the tops of stones (rocks) and hills." The people proved to be very ordinary New Guinea natives, living on the tops and ridges of stony mountains. My informant was a native of the Musa Valley and was speaking Motuan to me.

The more or less active volcano, Mt. Victory, on the north-east coast, is by surrounding natives reputed to be the abode of ghosts (*dirava*). I have even heard it said that the steam rising from its top is the smoke of the *dirava* village.

The existence of dreams (*nihi*) is quite well recognized. I believe the natives do occasionally mistake a dream for a reality. On one occasion when in hostile country, a carrier in the middle of the night dashed out of his tent calling out that the hostile people were after him. All in the tent took up the alarm and afterwards bolted. However, I soon heard cries of "*Nihi*," i.e., a dream, and the nature of the dream was clearly recognized. I can well imagine that such an incident might give rise to a tale of some "hero" coming and putting an entire army to flight in the night.

On another occasion a women in gaol accused a man of having entered her cell at night. The accusation seemed really believed by the woman, while it seemed impossible that the charge was true. I suspect that it was an instance of a dream being mistaken for a real occurrence.

It is worth noting that in New Guinea there is a very distinct tendency to regard the sun as a hostile agency inimical to man. The New Guinea native, like the perspiring European, quite takes this view of the sun. During a drought the natives especially blame the sun. I have often heard the natives say the gardens are unproductive because of the heat of the sun. In the tropics there is, of course, too much sun, and I can hardly think that any cult of that body could arise there on the coast. On the other hand there is a tendency to look upon the moon as a friendly agent, which prevents the blackness of night. The new moon is commonly greeted with cries of "*Hua!*" (moon) in a way which indicates pleasure.

IV. DISTRIBUTION.

It is only recently that I have realized the interest attaching to the distribution of culture in the Melanesian area of the Pacific, and especially to the distribution of the kava and the betel-nut cultures.

Betel-nut is widely distributed in New Guinea. In 1904 it was plentifully cultivated in the Mekeo district on the south coast. It also grows plentifully in the North-Eastern Division, including the Hydrographer Range and the country between the range and the Barigi River. A wild variety is also common and is eaten, although it is inferior to the cultivated variety. A sort of pod is sometimes eaten with it and also the stem of a plant. At other times leaves are eaten with it. Lime is always chewed with it.

Kava drinking is quite absent from all the Melanesian-speaking districts of British New Guinea. It has been found solely near the Fly River in the Western Division, far from any known people speaking a Melanesian language.

If tobacco is really a recent importation into British New Guinea, the way it has spread over the country is very remarkable. I have always found it in profusion

cultivated far inland among the mountains both on the south and on the north-east coasts. And this, although I was practically the first European to visit some of the districts.

On visiting the Fuyuge or Mafulu district within a very few years of Europeans going there, I found maize growing there. Moreover, the natives called it *korni*, but ridiculed the idea when I suggested that *korni* was a word introduced by Europeans.

Sugar-cane, taro, sweet potatoes, coco-nuts, sago, and varieties of yams are cultivated wherever soil and climate are suitable. A bean is also grown in the Hydrographer Range, but not elsewhere, as far as I am aware of.

On my arrival in New Guinea in 1903 a yellow native dog was common in the villages on the south coast. But inland, behind Mekeo, in the Mt. Yule district, the native dog was a black and white one. As soon as this district was brought under control the mountain dogs were traded for by the coastal people. Now the coastal dog is much mixed with European breeds of dogs, and the mountain dog is also probably the same. Neither variety of dog could bark like a European dog.

The distribution of the bow and arrow is very remarkable and has not, I think, been clearly reported. The bow and arrow is the main fighting weapon west of a line drawn from Cape Possession on the south coast, and passing from there in a northerly direction east of Mt. Yule and the Kovio people across the old German boundary to meet the north coast well in German territory. East of this line the bow and arrow is practically non-existent. A few bows and arrows had been introduced into Mekeo, when I knew it first in 1904, and the Mekeo people used to relate that before it came the coco-nut trees were a common refuge when a village was attacked. However, the village of Veifa once attacked Rarai, and in the attack the Veifa people were assisted by some bow and arrow allies from west of Cape Possession. These then shot down with their arrows all the Rarai people who had taken refuge in the coco-nut trees. In the Fuyuge districts the spear and club were the fighting weapons, but a small bow and arrow was used for birds. On inquiry, I was told that the bow and arrow might perhaps be used against an enemy in a tree-house, but not otherwise. Further east and on the north-east coast I have never seen or heard of an indigenous bow and arrow, and if such had been in general use I could have hardly missed it.

Broadly speaking, the south coast natives practise clan exogamy, and are patrilineal. So also are the north-east coast natives. The women almost invariably go and live in the husband's village. I have come across at least one exception. Thus I know of an instance where a Mekeo woman married a Roro native, and it was said that the marriage was only permitted on condition of the man coming and living in the Mekeo village. In this case I do not know what would happen as regards payment. Usually the essential feature of a marriage contract is that the woman shall be paid for. The word for "wife" (or "husband"), *a-dava-na*, pretty

clearly contains the root *-dava*, "paid for" or "payer," combined with a suffix *-na*, indicating a substantive, and a prefix *a*, probably indicating a person. Thus *adavana* would equally denote the payer (the husband) and the paid for (the wife).

Curiously, in one small district, the Nara district on the south coast, there is no payment, and the only requisite for a native marriage would seem to have been that the woman should make the man's leglets and shall cohabit with him.

Usually a man takes his father's name as a second one, yet in the Mekeo district the mother's name is occasionally taken as the second name.

On the north-east coast a similar exogamous marriage by payment is very common. But occasionally a man will marry inside his clan, when no payment is made. I know of at least one such instance in the Okein district. The Okein tribe are a branch of the Binendele-speaking people. Among these the women seem to have more independence than they have among the Melanesian-speaking people of either the south or north-east coasts. Inland from Dyke Acland Bay on the north-east coast, I was told that the marriage was usually accompanied by an exchange of presents, and that the woman regarded proper treatment by the husband as more a matter of right if there had been an equal exchange of presents.

The following instance occurred at Pongani, a Binendele village in Dyke Acland Bay. The natives said that a man had refused to carry out a marriage which had been arranged by the parents. They said that by their custom the woman's friends had the right of damaging the man's gardens. They inquired if I, as resident magistrate, would sanction the custom. The unwilling bridegroom agreed that it was the custom, but that in this instance it should not be carried out because it was the woman who had refused to carry out the contract. A suggestion on my part that if they were both willing, they had better solve the difficulty by marrying, clearly pleased neither party. I then made it understood that if the garden was damaged I would accept a complaint from the man and treat it as a court case. On my next visit to the village I found that the garden had been damaged but the man declined to make any complaint.

Like the Melanesian-speaking natives, the Binendele of the north coast show some signs of totemism. An Okein native told me that his "totem" was a certain bird. If he found it dead he would bury it. Usually, however, there is no sign of reverence of this kind, although each clan has one or more clan emblems. On one occasion a Binendele policeman of the Buna Bay village, and also stationed at the government station of Buna Bay, gave me the following instance of how he might use his plant totem. He said that if his master suddenly sent him on a journey, he would place a piece of his totem, or emblem, in the path he was going. His friends would see it and would then know that one of their clan had recently gone along the road, and on finding that he was the only member missing, they would conclude that he had gone along the road.

One curious incident deserves recording, I think. A native from the Maisin village of Yuaiyu had been recruited as a policeman and had been away from his wife in his village for five months. He was greatly concerned because at the end of five months his wife gave birth to a child, and he pressed me to find out the guilty individual responsible. I could find no reason for assuming that he was not the real father. But he himself could not be made to take this view.

The Maisin are a somewhat special type of native, speaking a language which, if it is not properly classed as Melanesian, at least shows signs of Melanesian influence. They have a clear tradition of having migrated from the Kosirava district, north of Cape Nelson. It is also clear that they crossed the Musa River and passed inland of the Cape Nelson promontory. In the Kosirava district are still to be found natives speaking the Maisin language.

On one occasion the short stature of the Kovio people living around Mt. Yule attracted my attention. As this may have some bearing on the question of the earliest population of New Guinea being composed of dwarf-like Negritoës, I give the average stature of the fifty-three natives of this district measured. The average was 60·2 inches. The fifty-three natives were all from the Inava valley in the neighbourhood of the villages of Inavarene and Lopiko. The Inava valley runs from the Mekeo district up towards Mt. Yule.

V. CATEGORIES AND LINGUISTICS.

It used to be stated that the less civilized races are without general ideas. This view is now, I think, being far less emphasized than formerly. The older view is by no means accurate; and I shall hope to convince you that even people living in the Stone Age, as the New Guinea natives were all doing a few years ago, have and can express very general ideas.

The mistake largely arose owing to the fact that natives arrange their ideas differently to the way the European does. They may have no accurate word for one of our general ideas, whereas we may have no word for one of their general ideas. In other cases the error may arise from actual ignorance of the native language.

In the Motuan language there is a word *kava*. It is translated primarily as "empty." Thus an empty bottle or jug is *kava*. As applied to a man it means "an empty man," i.e., a foolish man. As applied to hills or forest country it means empty hills and forests, i.e., hills and forests without villages or gardens, or, as we might say, barren hills and the primeval forest. Likewise a man who sleeps away from his wife is said to *mahutum kava*, i.e., to sleep emptily. The word *kava* is likewise applied to foods. Thus rice *kavakava* means empty rice, or, as we should say, plain rice, i.e., rice without meat or sugar with it. Doubtless the Polynesian word *kava* is connected with this Motu word *kava*, being the root which makes people empty, or, in other words, foolish.

If there were a New Guinea philosopher, he might with some superficial appearance of truth argue that Europeans lacked general ideas because they had to translate the Motu word *kava* by three or four different words according to circumstances. I think everyone will agree that as the Motuans of New Guinea use the word, there is really only one fundamental general idea involved in its meaning.

Another Motu word of a very general meaning is *ani*. Primarily it means the inside of anything—contents of a bottle, inside of a fruit or of a human being. Likewise it is used with verbal particles to mean “to inside” anything, that is, to eat it. In the reduplicated form, *ani-ani*, it is used to mean food. The same word is used to mean “to smoke tobacco,” *i.e.*, “to inside it,” or at least the smoke from it. The same word is used as the real meaning of a story or of a dream.

The same word *ani* is used in the sense of *laga-ania*, that is, to “inside one’s breath,” or, in other words, to take a spell after working hard and when one is out of breath. In such circumstances we say that we stop to regain our breath. The Motuans say they stop “to inside their breath.”

I have heard the word *ani* used in the sense of to “inside water,” or, in other words, to drink it; but the proper word to use in the case of fluids is the word *inua*; thus the Motuan almost always says *ranu inua*, to drink water, and seldom *ranu ania*.

The word *kamonai* is not only used in the sense of to hear, to understand, and to obey; but the Motuan would also use the same word to mean to smell, *e.g.*, *bonana kamona*, “to grasp a smell,” or, as we should say, “to smell a smell.”

A word usually spelt *mate*, but pronounced *matse* or *mase*, is commonly inexactly translated by “dead” or “to die.” The more accurate meaning is “to be unable to be made to move.” I am aware that the word is often used in our sense of the word “dead”; but it does not necessarily mean “permanently unable to move.” Our idea of “dead” can be translated by *mase wadain*. The word *wadain* is very difficult to translate exactly. It adds a sense of permanence to the word it is used with. Thus a kangaroo running away and being chased might be said to *heau*, but when the chase had been given up the expression *ia e heau wadain*, “it has run away,” might be used with the implication that further chase is not worth considering.

That the word *mase* really means “unable to move,” will be apparent from the following. A sick person who has fainted is spoken of as *mase*, that is, unconscious and unable to move. Soon after arriving in New Guinea, I was told that a European sent a native to inquire how a sick native villager was. The astonishing reply was “Oh! he is all right now; but he died three times in the night.” The native was merely translating his word *mase* by the usual European translation “dead.” Really he only meant that the patient had fainted or had become unconscious three times in the night.

It might be noticed that a sceptical twentieth-century European merely looked upon the report received as a "good story" or perhaps as an example of "the stupidity of natives." But had the same story been told to a wanderer in the Early Iron Age, we might now be discussing the origin of a myth that the inhabitants of some distant island in the Pacific were accustomed to come to life again after death.

Curiously, in parts of German New Guinea, as recorded by Friederici in *Mittheilungen aus Deutschen Schutzgebieten* (Berlin, 1912, vol. ii, p. 188), *dina i mase* means "the fire has gone out." In Motuan *dina* means the sun, and a Motuan hearing the every-day phrase *dina i mase* would take this to mean "the great fire (i.e., the sun) has gone out." This information then handed on to a European in Motuan might then be understood to mean "the sun is dead." As the sun goes out every night it would be by no means impossible for a European to understand that the sun dies every night. It seems to me that by some such series of misunderstandings a solar myth of the death and resurrection of the sun could easily arise. The German New Guinea language referred to, "the *Barriai*," is of course a Melanesian language very closely akin to Motuan.

There is considerable further evidence that *mase* really means "immobile" rather than "dead." The anæsthetic chloroform is called by Motuans *mase mura-mura*—that is "*mase* medicine," or medicine, which renders a patient immobile. Before taking chloroform a native is by no means perturbed at being told he will be given *mase muramura*. He may perhaps press for an assurance that he will become *mauri* ("able to move") again. So, too, a watch or clock which has run down is said to be *mase*. I am quite certain that a native does not look upon a watch as a living thing.

A stranger at Port Moresby might be considerably surprised by a native coming up to him and perhaps pointing to the European's watch-chain and saying, "Master, how much watch?" I have had this said to me. The native would not really mean that he was anxious to know how much the watch cost. He would only mean he wanted to know the time. He would be only literally translating the Motuan sentence, *Dina gauna hida?* ("What is the time?"), into English. I have said he would be translating the sentence literally, but even this translation is not quite literal. The exact translation would be "Sun-thing how much?" (*dina*, sun; *gauna*, thing; *hida*, how much). But I suppose the natives have learnt that a literal translation like this would not be understood even by the European resident in New Guinea. The origin of the words *dina gauna* to mean a "watch" or "clock" is quite obvious. Before the arrival of Europeans the only way a native had of estimating time was by the sun. Hence the European timepiece was called a sun-thing when they learnt the use of it.

The word *gaigai* is usually translated "snake." It is also used for "a worm" or "a centipede," in fact for anything long and wriggling. I have no doubt more

than one native has been treated for snake-bite because he has reported that a snake had bitten him, when he only really meant that special form of *gaigai* which we call a centipede had done so.

The way in which the Motuan (in common with other Melanesian languages) uses the possessive pronouns and the possessive suffixes is remarkable. For possessions of a temporary nature he uses the possessive pronouns, *Lauegu*, *oiemu*, *iena*, etc. For possessions of a permanent nature he uses the possessive suffixes *-gu*, *-mu*, *-na*, etc. In short, for things which can be given away or sold he uses possessive pronouns, and for things which cannot, such as parts of the body, relations, name, etc., he uses a suffix. I can understand that a myth might easily arise as a result of this practice, combined with the fact that the Motuan uses the same word *kwara* for either his or any one else's head and for a skull after separation of the soft parts.

Thus a Motuan seeing a man carrying a skull might say, "*Ia mai iena kwarana imamuai*." A European would be inclined to translate this by "He had his head in his hand." From this a myth to the effect that in some distant place men carried their heads under their arms might easily arise. The use of the word *iena* in Motuan, however, would clearly show that the man was not carrying his own head but the head or skull of someone else. But a foreigner who did not fully understand the Melanesian use of the possessives might easily overlook this point and would easily give the literal translation, "He had his head in his hand."

So far I have tacitly assumed that *kwarana* really means head. It is always so translated in vocabularies, but its meaning is really wider. Thus the lid of a teapot is called its *kwarana*, and "head belong teapot" is a favourite native way of saying in pigeon English, "the lid of a teapot." So, too, *kwarahu* (*kwara-ahu*) is used to mean "head of the fire," that is, smoke. *Ahu* is a common Melanesian root meaning fire or something connected with fire.

It might be noticed that words which are used with the possessive suffixes cannot be used without them. Thus the word for foot, *ae*, must always be used in the form *aena*, that is, "his or someone's foot." Likewise the word *ima*, "hand," and *kwara*, "head," are practically always used with a possessive suffix. And in cases where we should use no possessive in English the possessive suffix 3rd person singular is used, giving *imana* and *kwarana*. The word *ima* is, however, used without a suffix to mean the numeral five; and *kwara* is used without the suffix in the sense of *kwara-gauna*, "head thing" or "hat," as well as in the sense of *kwarahu*, "smoke."

In Motuan we have no true parts of speech. We have a word which closely resembles the hypothetical Indo-European roots, if such ever really had an independent existence. Various quite separable affixes will in turn make this root into a verb, a noun, or give it a transitive or other sense. Even the noun has no number as a rule, and the verb no true tense, although the common indefinite

form of the verb is often called a present or a past tense. In this respect a Motuan used his words in a more general sense than we do. He can of course, if he wants to, express the tense of a verb, but he very commonly allows it to be inferred.

There is one quite exceptional Melanesian-speaking people who are strangely deficient as regards counting. In 1905 I was in their country. They live on the south coast in the Kuni district, inland from Hall Sound. These people have, or at least in 1905 had, no trace of any numeral beyond three. For "two" they used *lua*, and for "three" *koi*. These words are both obviously of Melanesian origin. In 1905 I was using a Motu-speaking Kuni native as guide. On asking him how many times we would have to sleep on the road in going from Mafulu to Kabadi, he replied in Motuan, "three times," *toi*. Like many of the people around Hall Sound he was unable to say a "t," and pronounced all his "t's" as "k's." So his pronunciation of the Motuan word *toi* was really *koi*. On my asking the names of the places we had to sleep at, he correctly mentioned five names, and these names I afterwards verified. On asking him to explain why he said we had to sleep *koi* times and yet gave five names, he seemed quite unaware that the fact required explanation. At the time, I discussed this with some of the missionaries who could talk the Kuni language, and they confirmed the fact that in practice the Kuni people used the word *koi* to mean a few. I have recently noted that the Rev. V. M. Egidi in *Anthropos* (1907, vol. iv, p. 387) says practically the same thing. The Kuni people, in fact, really only counted one, two, a few, many.

The Kuni are the only Melanesian-speaking people in British New Guinea who have gone far inland. Their language is obviously a regular Melanesian one, very closely allied indeed to the Motu of Port Moresby, which has a well-defined system of numeration, going at least up to a thousand. It is very difficult to see how the Kuni people can have lost numerals like "five," if they ever had them. I feel rather driven to the conclusion that the Melanesian numerals above *toi* are a comparatively recent introduction, subsequent to the arrival of the Melanesians in New Guinea. The Kuni natives are by no means deficient in intelligence. The Kuni guide I had was quite intelligent and particularly energetic.

The mistakes which may arise either owing to the imperfect knowledge a native has of English, or to the imperfect knowledge a European has of a native language, are most extraordinary.

It was once reported to me by a European that a native policeman chased a native; the native threw two spears at the policeman without hitting him, and then threw a stone at the policeman which hit him on the knee and damaged it. The policeman was duly produced with a damaged knee. This account was obtained by a European not long in the country from a native who was supposed to speak English quite well. On my inquiring into the matter the information I got was something as follows. "Yes; the policeman ran after the native. The native threw two spears." On my asking if the spears struck the policeman, the reply

was: "No; but the stone did." I then asked where the spears were thrown. The reply was, "Into the grass so that the native could run faster." I then said, "How did the stone strike the policeman?" The reply given was to the effect that the policeman finally caught the native, who struggled, and that in the struggle they both fell down and the policeman struck his knee on a stone in the ground.

On another occasion a European reported that some natives accused another native of trying to kill them. On inquiry it was found that the accused was the local rain-maker, and that the charge really was that the rain-maker was not making rain, as a result of which the native gardens would fail and the people starve and die.

I have known a chief's mark on a canoe mistaken for a real object in a canoe, and I quite believe that at least one case of magic causing death has been interpreted into a real charge of murder. So, too, I have known confusion arise because the ordinary Motu word for house, *ruma*, does not include a *dubu* or men's house. Hence in some districts at least, if a European referred to a *dubu*-house as a house or *ruma*, only confusion used to be caused.

Here also is a convenient place to mention a couple of instances of the curious way in which a native will mispronounce European words.

I do not think any of you will recognize what a native would mean by the word *kokikōā*, even if I told you it was my usual title in one district. It is simply a mispronunciation of the word "doctor." The native arrives at the pronunciation *kokikōā*¹ in the following way. All his words and all his syllables end in a vowel (or rarely in a nasal), hence he usually inserts a vowel between two consonants in an English word, and after a consonant if a consonant ends a word or a syllable. On these lines "doctor" is usually pronounced *dokitōā* by natives. But in one district the natives do not use and cannot pronounce the dentals "t" and "d." Hence, for these two letters they substitute a "k" or perhaps a "g," and so pronounce *dokitōā* as *kokikōā*.

Other examples of the insertion of a vowel are the words "spoon," pronounced *sipuni* by natives, and "steamer," pronounced *sisima* by natives.

It may seem incredible that the two English words "toast" and "sausage" could ever be confused. Yet a native hears and pronounces them much alike. He pronounces the English word "toast" fairly correctly with a short "o" as *tosta*. But he gets into difficulties with sausage. The Motuan does not place an "s" before any letters except an "i" or an "e," hence before back vowels such as "o" he replaces an "s" by a "t." The first letter of "sausages" becomes, then, a "t" and we would get *tosage*. But the second "s" in sausages also becomes modified in the direction of a "t" sound and we would get *tostage*. But the "j" sound of the final "ge" is also foreign to the Motuan, and in this case at least, he practically leaves it out, thus leaving us only with the word *tosta*, or toast.

¹ "ōā" has the sound of "aw" in the English word "law."

As an example, one day my cook-boy told me that he had some toast packed away in a bag. I knew there were only tins of meat in the bag, but as he stuck to his statement I told him to undo the bag and get the toast. He opened the bag and produced some tins of sausages.

We know that legends and folk-tales have been handed down from generation to generation and from one race to another. I am convinced that many such tales must have been greatly modified and even directly originated by misunderstanding due to taking a word in an incorrect sense (such as assuming that *mase* means "dead" instead of "unable to be made to move"); or by misunderstanding the pronunciation of a word as spoken by a foreigner, as I did when I understood *tosta* to mean "toast" instead of "sausages."

CIRCUMCISION IN NOIKORO, NOEMALU AND MBOUMBUDHO.

By A. B. BREWSTER, late Governor's Commissioner, Colo North, Fiji.

THE people of Noikoro, Noemalu and Mboumbudho live in the hill country of Viti Levu (Great Fiji). The first two mentioned, who were dwellers in Koro and Emalu, as the names denote, are tribes whose history is much intermingled. Their *Kalou Vu* or ancestral gods were light-coloured straight-haired men, probably Polynesians, who made their way from the coast to the interior and, owing to their prowess and personal appearance, were adopted by the Melanesian inhabitants of that period. Time and ancestor worship have accorded divine honours to these illustrious strangers, and they were worshipped as the founders of the tribes they joined. History starts from their arrival, there being no records prior to their appearance. The notes which follow were compiled in 1895, when the ninth descendants of these divine ancestors occupied the chieftaincies of both these clans. They, too, had children, thus making a chain of ten generations since the arrival of the god-like progenitors.

I saw a great deal of the Noemalu people, and have a detailed history of the tribe from the time of the landing of Nggidhatambo (the Sacred Head) at Nggamo, on the Southern Coast near Serua, to the time of the holder of the chieftaincy in 1895—a descent of nine lineal generations. Nggidhatambo was adopted and deified by the clan under the name of Roko Tui Vuna (the Sacred and Noble Originator).

I have, too, the records of many of the other inland tribes, and I hope with them to be able to compile a fragment of Fijian history. In the year already mentioned (1895), I could never go further back than nine generations, and that only with the tribes which had adopted foreign ancestral gods.

The Mboumbudho people, whose ritual of circumcision is also cited, afford a sharp contrast to their neighbours in Noikoro and Noemalu. They seem to be a purely aboriginal tribe without intermixture of blood from outside. They were unable to trace their chiefs back for more than five generations, yet they had legends which recorded the arrival of the strangers on the coast, notably that of Ndengei, who became by canonization the supreme god of Fiji. They have preserved their legends better than their records of the holders of the chieftaincy.

Up to the time of my leaving Fiji in 1910 circumcision was still in vogue, but it was done privately, and, as far as I knew, without any ceremonies. For some years I had under my command a small body of the Armed Native Constabulary. The younger men every now and then would go mysteriously sick, and I used to find out that it was owing to circumcision. We generally had what I called a

"Barber-Surgeon" in the force, one of the hereditary priestly caste, who in olden times was also the valet and physician of the chiefs, and he performed the operation after due consultation with the elder men. It was regarded as a matter of course and I was not told about it. I did not like being deprived of the men thus put out of action temporarily, but it was one of the many customs to which one had to defer.

According to the native chronicler, sickness was the cause of circumcision. It was a sacrificial act made to appease and avert the wrath of the ancestral gods. When a man got infirm and old, and sickness got such a hold on him that he could not shake it off, he would say, "I have sinned against the *Lawa Ruku*, therefore must I make a sacrifice (called in Noikoro *Moko nai soro*).¹ Then he would get one of his younger relatives and one of his sons to go through the rite of circumcision as an act of atonement. In Noikoro the foreskins are actually cut off, as with the Jews. The custom varies greatly. In Noemalu, an affiliated tribe most closely connected with Noikoro, the foreskin is only slit.² In Mbau I believe the foreskins are actually severed (*dhembendolo*), whilst at Rewa they are only slit (*tasea*).

As they mentioned that in Noikoro circumcision was a sacrificial act, I naturally asked whether the severed foreskins were presented as offerings to the gods, but I could not find out that it was so. They replied that they were merely thrown away, but I think that this can scarcely have been the case. The foreskins must have been carefully disposed of in some way, as I should think that such a thing in the possession of the enemy might be used as a powerful spell, and be the cause of the death of the former owner by sorcery (*ndrau ni kau*). However, in spite of inquiry, I could not find that anything was done with them.

Ratu Nemani Ndreu, Roko Tui Ba, some years ago told me that in Nandi the foreskins were completely severed and presented to the ancestral spirits, and further added that he himself had undergone the operation three times in order to propitiate his deity. Upon my reminding him that that was scarcely probable, as it appeared to me that he could only once lose his foreskin, he explained that on the latter occasions he had only been bled in that particular part, and added that the ancient gods continually required the spilling of blood. He also told me that those who practised complete circumcision had a great contempt for those who only partially did it, and when they fought such people they advanced to the battle reviling them on their uncircumcised state, saying that they were unclean and stank. So when the Bible was translated, the objurgations hurled by the Israelites at the uncircumcised Philistines were a familiar cry to them.

¹ *Lawa Ruku* : Canons and ordinances laid down by religion. It regulates the offerings to be made upon the death of relatives, in order to ensure them a favourable reception by the ancestral spirits. In a matter like this most probably the old man's conscience would prick him. It also provides for thank-offerings on birth of children, on the slaying of enemies, etc. In fine, the general ceremonial law of ancient Fijian, ancestor worship.

² This operation is now normally called incision.

In Noikoro the youths of a *mátanggali* were circumcised in the *Mbure*, the great tribal hall, where the adult males slept. The operation was performed when signs of puberty began to be shown, such as the appearance of hair on the private parts, etc. It was most convenient for ceremonial purposes that a number should be done together. A part of the *Mbure* was lined off by means of spars or logs, for the occupation of the novices, and a corresponding partition was made on the opposite side for their sponsors, who were elder relatives, and who, of course, had previously been initiated. These were called *Roko Tukutukani* (the noble elders), the novices *Yavou*, literally, "the new men."

The *Yavou* knelt at the edge of the spar which, lying on the grass, divided their compartment from that of their sponsors. They knelt naked, with their hands clasped at the back of the head. All the elders and women of the tribe were present when the sponsors, with bamboos, performed the act of circumcision. Strips of white *masi* (native bark-cloth), were ready as bandages, and these the sponsors tied very tightly round the afflicted part. It was done in such a manner as to cause erection and excruciating pain; and it had to be borne without wincing as the women of the tribe were all present, and the youth who did not bear himself with manly fortitude on this occasion would for ever be despised by his female acquaintances. While this painful operation of bandaging was effected, the women repeatedly chanted this couplet in the Noikoro dialect.

Ka vivi tutu kaikai
Ka mata landu landu mai.

Or:—

Tie it up tightly
That it may stand erect.

Then the friends of the youths brought them presents. Some brought mats, others *masi* (native cloth), *tambua* (the ivory teeth of the cachelot or sperm whale), etc., according to their means. They ranged themselves up in a part of the *Mbure* separate from the *Yavou*.

The ceremony of naming the *Yavou* then commenced. Hitherto they had borne the names received in early childhood. On the day of circumcision they changed their names, each choosing one for himself. The ceremony was conducted in this way. The women knelt in two ranks, facing each other, so as to leave an intervening space of two or three feet which, with their hands, they swept perfectly clear of all grass or rubbish. The ranks stretched from the lower end of the house to the *Mbou*, or king post, at the upper end. At the *Mbou* stood a man completely shrouded in mats. He leant his head against the post; his back was to the lane of women. Then the *Yavou* went outside slowly by the upper doors, and re-entering at the lower door, slowly crawled up between the two lines of women, till they came to the man shrouded in the mats, whom they lightly touched between the shoulders.

The man would then say, "What is your name?" The youth would give it. For instance, let us say "*Vunimbombo*." Then would come the question, "What is your new name?" We will reply, so as to be able to illustrate the song given below, "*Teladha*." Then everybody in the *Mbure*, including the women, used the most filthy language possible to the aspirant. When they had finished the abuse they chanted:—

*Mbili yadha, mbili yadha,
Sa ndei ko Vunimbombo,
Ka sa toka ko Teladha.*

Or :—

Rename him, rename him,
Too long has he been Vunimbombo,
Now he is called Teladha.

Sometimes as the youth, after having crawled between the women, told his name to the shrouded figure at the post, this man would say, "Before you touched me, your spirit preceded you and touched me." That was an omen that the youth was not long for this world.

When all had given their new names, the proceeding was closed by all in the *Mbure* making this chant :

*Tula ni Mbaka ndungudha,
Tula ni Mbaka Nawa ndungudha tu,
Tula ni Ara le, e, e !
Tula ni Mbaka ndungudha tu,
Tula ni Mbaka Nawa ndungudha tu,
Tula ni Ara le, e, e !*

*Na niu kei na niu ngawengaue,
Ndaru mei kanda kandavia dhake,
Tamamu, luveimu na dhake, dhake,
Konai ya, e.
Ndure tiko mai tambale vau,
Nonai mbale mbale ko Ra Matau,
Nai e ya e.*

Or :—

Root of the Mbaka that hollow stands,
Root of the Mbaka Nawa that hollow stands,
Root of the Ara, le, e, e !
Root of the Mbaka that hollow stands,
Root of the Mbaka Nawa that hollow stands,
Root of the Ara, le, e, e !

The coco-nut and the old coco-nut,
 Let you and me climb up to the top,
 Your father, your son, to the very top,
 Konai ya, e.
 Stand up in the pass of the Vau,
 Let him be called Ra Matau,
 Nai e ya e.

(NOTE.—*Mbaka* and *Mbaka Nawa* are species of the banyan tree, and probably floral emblems of the Noikoro tribe.)

Among the Noemalu, though the tribe was most intimately and closely connected with the Noikoro, the customs at circumcision were very different, though in both cases the novices (*Yavou*) assembled in the tribal *Mbure* for the operation, accompanied by their sponsors, who acted as squires to the newly circumcised, attending upon them at meal-times, fetching their drinking water, etc. They occupied separate divisions of the *Mbure*, the youths forming line at the edge of their division, kneeling down with their hands clasped behind their heads, whilst their sponsors performed the operation. But the foreskin was only split, though it is said that if anyone were abnormally developed in that way part of it would be cut off. The sponsors also bandaged the afflicted part.

Among the Noemalu the novices wore their bandages and remained in the *Mbure* for three days. On the fourth day they took off the bandages and made ready for the bath, at which occurred the great ceremony of the event. The blood-stained strips of *masi* which had formed the bandages were carefully collected and twisted into a rope, and hung up in the *Mbure*. There it remained until the next foray took place, when it was used as a slow-match with which to fire the enemies' villages. *Masi*, the bark-cloth made from the paper mulberry, called *tapa* in the Eastern Pacific, and so described by Captain Cook, is very inflammable, and when rolled up makes an admirable slow-match.

The youths then proceeded, swathed in *masi*, to the selected bathing-place, accompanied by their elders armed with clubs and spears. Public notice had been previously given that the *Yavou*, or newly circumcised, would bathe on a certain day at an appointed place, and thither flocked all the people of the neighbouring villages. They came armed with spears, short throwing-clubs, stones, and all kinds of missiles. Arrived at the water's edge, the *Yavou* divested themselves of their folds of *masi*, which became the property of their elders. They then went into the water, and had a long, delicious bath, and cleansed themselves of the accumulated filth of the previous four days. When they had finished, they made a simultaneous rush for home. This was a signal for the people of the neighbouring villages to chase them and hurl their missiles at them. The youths who successfully dodged these would become celebrated warriors, but he who got hit would not have a long career. However,

to effect a diversion, their sponsors, who had come down armed for that purpose, threw themselves between the *Yavou* and the pursuers, with whom they had a sham fight. This lasted until the newly circumcised got home to their village, when time was called and the game was over, and pursuers and pursued all feasted together on food previously prepared by the novices' mothers. Though many were badly bruised and cut, all fed together to show that there was no animosity.

In Mboumbudho the custom was entirely different. When a number of aspirants were ready for the rite, their friends made a presentation of native property, consisting principally of warlike weapons, to the elders in the tribal *Mbure*. A consultation was then held and a day fixed for the ceremony, which was commenced by a sham fight between the *Tako* and the *Lavo*. Throughout inland Viti Levu these words signify the alternate generations. If a man is a *Tako* his son will be a *Lavo*, and should the latter have a child, then it becomes again a *Tako*. Certain magic virtues appertain to this relationship. They can render services to each other which would be of no effect if done for one of their own class or generation. The following example may help to explain this custom. I was out tracing the road to Mba, when a Mboumbudho man of my party got badly stung by the *salato*, or Fijian nettle, which causes the most intense irritation. Our guide, a Dhawanisa youth, said to the sufferer, "I am a *Tako*; if you are a *Lavo* I can give you leaves which will relieve your pain; but if, like myself, you are a *Tako*, I can do no good." These two men prior to the advent of British rule were at war with each other, and could have had no intercourse, which shows that notwithstanding this, the custom of *Tako* and *Lavo* was widespread. People on terms of great intimacy with each other, if of different generations, address each other as *Tako* or *Lavo*, as a term of endearment.

The youths ready for operation, after a sumptuous meal, in which pigs or fowls were the *pièce de résistance*, dressed themselves in all the finery they could muster, and then proceeded, each with a chosen friend, called their *Toma*, to some lonely stream in a distant part of the forest already agreed upon. A *Vuniwai*, skilled in native surgery, operated upon all the youths; each was not performed upon by his attendant friends, as was the custom in Noikoro and Noemalu. The procedure at the water's edge (called in Mboumbudho *veisilimi*, or the bathing-together) was as follows: The *Vuniwai*, or surgeon, laid his hand upon the stem of a young bamboo, bent it down, and, mentioning the name of the youth about to be operated on, prayed to the ancestral spirits that this youth might grow up strong and brave, and become a true *Moli*, or shaddock tree, the tribal emblem of Mboumbudho. The prayer ended, the *Vuniwai* pulled up the young bamboo by the roots; if it came out easily, it was an omen that the youth would become all that had been prayed for, but if the bamboo was dragged out with difficulty, then the career of the youth would not be long. With each youth this ceremony was repeated, and the operation was done with a piece of the bamboo split off the up-rooted plant. Usually

the foreskin was only split, but if it was at all long, it was trimmed down to what was considered a reasonable length. The operation had to be borne with fortitude ; it was the ordeal of manhood, and had to be undergone without a murmur. As soon as the surgeon had finished, the *Toma*, or intimate friend, at once supplied a bandage of the fresh bark of the wild fig, which was left on for about two minutes, and was supposed to have a cooling effect. This was followed by a strip of the fleshy stem of the *via mila*, the juices of which were thought to have curative powers ; and this application, after it had been left on somewhat longer, was replaced by the usual bandage of *masi*. After this, the youths stripped off their finery, and gave it, with other presents, to the surgeon, as payment for the operation. On this day, too, the youths came dressed in fine flowing *malo* or *masi*, which was called *masi kalou*, or *masi* of the gods. This was also taken off, placed in a heap with the used bamboo knives, and buried in a hole specially dug for this purpose. None of the youths might ever revisit this spot, under the pain of death. So strict is the rule, that in Mboumbudho, when one is visited by one's friends, after a long interval, one says to them, "Is your *masi kalou* buried at my village, that you do not come to see me ?"

The youths recently circumcised in Mboumbudho are called *Kula* (in Noikoro and Noemalu *Yavou*). They must not be mentioned by their names, and their attendant friends are their *Toma*, which nearly all over Colo is the equivalent of the coast *Tau* (friend). The *Kula* also may not address their friends by their proper names. They mutually address each other as *Nonggu Toma* (My friend). As they return home, they are attacked by a party of their fellow tribesmen who lie in ambush on the road, and shoot at them with arrows and pelt them with throwing-clubs, *Ula*. The *Kula* then plunder the gardens and kill the pigs of their neighbours, for which they have licence, the owners only shrugging their shoulders and saying, "The path of the *Kula* has passed this way." Also it has become a saying when one robs a garden without licence, "Is he a *Kula* that he can do this thing ?"

The *Kula* have to observe these rules :—

1. They must not eat with their *Toma*.
2. They must eat lying down for ten days.
3. They must not eat flesh of any sort, nor salt, nor green vegetables.

Circumcision is cleansing and purifying, and no man can expect to be respected unless he undergoes the operation.

The *Kula* and the *Toma* pass only one night of vigil in the *Mbure*, during which torches are provided and the bandages are continually changed. After a fortnight the *Kula* go about their ordinary avocation attended by their *Toma*, who, as necessity requires, change the bandages, not necessarily in the *Mbure*, but if they are working away from home, in some secluded spot chosen for this purpose. This goes on till the part is healed. The last bandage of all is applied by the *Kula* himself

and is made of the bark of a tree called the *Ndekendeke*. It is applied in some very secluded and secret spot, and must be put on in the most skilful and careful manner. In future life, if a man should behave foolishly at any time, people would say to him: "Oh, you must have put on your *ndekendeke* in the most clumsy manner, and it causes you to behave awkwardly."

Four days after the removal of the last bandage, the newly circumcised make the *Mandrili*, a thanksgiving offering of cooked food to the elders in the tribal *Mbure*.

THE LANGUAGES OF NORTHERN PAPUA.

By SIDNEY H. RAY, M.A., F.R.A.I.

1. INTRODUCTION.

THE former German Protectorate of Kaiser Wilhelmsland extended along the northern shore of the eastern half of New Guinea, from Cape Ward Hunt and the mouth of the Mamba River on the east, to Humboldt Bay on the west, and inland to the central range. Included in this region were several islands or island groups, the principal being Cretin Islands off Cape Cretin to the north of Huon Gulf, Rook Island, Long Island, and Dampier Island, with several smaller islands in Astrolabe Bay, Hansa Vulcan Island off the mouth of the Ranu River, the Schouten and Muschu Islands, and the Ali Group.

The first collection of any words in this region were made by the Dutch navigators Le Maire and Schouten in 1615. Some accounts of their voyages contain vocabularies (so-called) of New Guinea, Moïse Island and Moa Island.¹ In 1907 I suggested,² and Friederici has since conclusively proved,³ that the first of these did not come from New Guinea but from New Ireland (Neu-Mecklenburg), whilst the second probably shows the language of the Tabar Islands,⁴ and Moa is still not identified.

The mistaken vocabulary of New Guinea was quoted by Reland,⁵ and provided the numerals for Hervas⁶ and the New Guinea vocabulary of Pallas⁷. With the Nufor of Forrest⁸, they represented Adelung's knowledge of New Guinea languages when the Mithridates appeared in 1806,⁹ and nothing new was available for Balbi¹⁰ in 1826 or Latham¹¹ in 1847, as all the voyagers passed the mainland. It was not until the Russian traveller Miklucho-Maclay resided for some time among the natives on the shore of Astrolabe Bay that any mainland language of this part of New Guinea became known. An officer of the war vessel on which Miklucho-Maclay returned home gave Dr. A. B. Meyer a list of words in one of the dialects which was

¹ A. Dalrymple, *An Historical Collection of Voyages*, London, 1770-71. Appendix. Jakob le Maire, *Spiegel der Australische Navigatie*, t'Amsterdam, 1622. Ch. du Brosses, *Histoire des Navigations aux Terres Australes*, Paris, 1756.

² *Reports of the Cambridge Anthropological Expedition*, Vol. III, p. 284, note 2.

³ *Beiträge zur Völker- und Sprachenkunde*, p. 2 ff.

⁴ *Op cit.*, p. 10 ff.

⁵ *Hadriani Relandi Dissertationem Miscellaneorum*, Pars Tertia, Trajecti ad Rhenum, 1706-8.

⁶ Hervas y Panduro, *Catalogo delle Lingue*, 1784. *Vocabolario Poliglotta*, 1787.

⁷ P. S. Pallas, *Linguarum totius orbis Vocabularia comparativa*, Petropoli, 1786-89.

⁸ Forrest, Th., *A Voyage to New Guinea*, London, 1779.

⁹ J. C. Adelung, *Mithridates oder allgemeine Sprachenkunde*, Berlin, 1806.

¹⁰ A. Balbi, *Atlas ethnographique*, Paris, 1826.

¹¹ R. G. Latham, "On the General Affinities of the Oceanic Blacks," Appendix to Jukes's *Voyage of the Fly*, 1847.

published in an article on the languages of the Philippines in 1873.¹ In the same year Maclay himself prepared a considerable vocabulary of dialects spoken in villages around Astrolabe Bay. He had acquired a fair knowledge of the language but he delayed putting it to paper, and having to leave suddenly, the words escaped his memory. His notes, with a short grammatical analysis by Grube, were published by Gabelentz and Meyer.²

In 1890 Schellong published a short grammar of the language at Finschhafen, with an appendix containing a few words in other dialects.³ Zöller in 1891 gave a comparative vocabulary from various districts along the coast as far west as the Kaiserin Augusta River, with short notes on grammar.⁴ Grube in 1895 published material for the Kai or Katedong (*i.e.*, Bush language) behind Finschhafen.⁵

In 1900 and 1901 Father Schmidt published notes on studies by missionaries of the *Societas Verbi Dei* and an important paper on the relations of the Jabim of Finschhafen.⁶ In a valuable contribution to the knowledge of this region in 1902 he gave a summary account of the languages as far as then known, including in this new information about several languages.⁷ Hanke's important study of the Bongu, the fullest account of a Papuan language in this region, appeared in 1909.⁸

The publication *Anthropos*, under the guidance of Schmidt, has contained much valuable linguistic information, and several studies of languages have appeared in the *Mitteilungen* of the Seminary for Oriental Studies in Berlin.

A great many incidental notices of the languages are scattered in various periodicals. Most of these are noted in the Bibliographical Appendix to this paper. Friederici's works on the Ethnology and Philology of German New Guinea,⁹ and on the Melanesian Wanderings¹⁰ contain words from various places, including some notes on grammar. During the war Fathers Vormann and Scharfenberger have published a grammar of the Papuan language at Potsdamhafen.¹¹

2. CLASSIFICATION.

The languages of Northern Papua may be distinguished as "Melanesian" and "Papuan." The first term implies a general relationship in grammar and vocabulary with the Melanesian languages of British Papua and the Melanesian islands; the second indicates a complete difference in grammar and vocabulary from the Melanesian without implying any relationship between those languages to which the term is applied. When it is said that the Ali language of Northern Papua is Melanesian, the inference is that it shows a close agreement with, *e.g.*, the Motu of British Papua

¹ Cf. Bibliography, No. 26.

² Cf. Bibliography, No. 27.

³ Cf. Bibliography, No. 37.

⁴ Cf. Bibliography, Nos. 51, 52.

⁵ Cf. Bibliography, No. 16.

⁶ Cf. Bibliography, Nos. 38, 39, 40.

⁷ Cf. Bibliography, No. 41.

⁸ Cf. Bibliography, No. 19.

⁹ Cf. Bibliography, No. 12.

¹⁰ Cf. Bibliography, No. 13.

¹¹ Cf. Bibliography, No. 48.

or Raga of the New Hebrides, but the designation of the Bongu as a Papuan language does not imply that it has a relationship to other languages called Papuan, such as, *e.g.*, the Kiwai, Binandele or Mailu of British Papua or the Nasioi of the Solomon Islands.

It is not possible within the limit of this short paper to do more than indicate the main characteristics of these two divisions of speech in Northern Papua. Only a few of the languages are adequately known and the character of a great many has to be inferred from very brief specimens of grammar and vocabulary.

The best known Melanesian languages are those of Tami, Yabim, Bilibili, Karkar, Ali and Tumleo. The best known Papuan are the Kai, Bongu, Bogajim, Monumbo and Valman.¹

A few contrasts in structure may be shown. These, with the pronouns, numerals and vocabulary, will serve to illustrate the difference of the two groups.

3. LIST OF LANGUAGES.

Here follows a list of the languages of Northern Papua. No language is entered unless an actual specimen has been recorded. The arrangement is geographical, beginning from the east.

Melanesian Languages.

TAMI GROUP.

Tami.—Tami Islands and mainland at Cape Cretin, between the south of Langemak Inlet and the Bugaim River.

Bukaua.—Coast from Bugaim River to Cape Arcona in Huon Gulf.

Yabim.—About Finschhafen from Bussim on the north, to the south of Langemak Inlet.

Suam.—A village in the Yabim district.

KELANA GROUP.

Kelana.—Coast about 42 miles north of Finschhafen.

. . . .—Rook Island.

Kaimanga.—Mountain district of Rook Island.

Tuom.—Island in the Siäsi Group, south of Rook Island.

Mantok.—Island in the Siäsi Group.

Sigap.—Island in the Siäsi Group.

BILIBILI GROUP.

Bilibili.—Island in Astrolabe Bay.

Mitebog.—Island in Astrolabe Bay.

Bob.—Island near Bilibili.

Szeak, Bagili, Yrempi (Erempin), and Matagar (Matugas).—Coast between Cape Croisilles and Alexishafen.

Karkar.—Southern half of Dampier Island.

¹ For the localities where these languages are spoken see the List of Languages.

BILIBILI GROUP—continued.

Siar, Ragetta (Graget).—Islands in Friedrich Wilhelmshafen, North of Astrolabe Bay.

Sarang.—Village north of Cape Croisilles in Adalberthafen.

Manam.—Village in Hatzfeldthafen.

Hansa.—Villages of Beliao, Ulugoma, Uiassa, Zochari, Budua, Damara, and Tugulaba on Hansa Vulcan Island in Potsdamhafen.

SCHOUTEN GROUP.

Wokeo (Wogeo).—Western island of Schouten Group.

Keule.—Central island of Schouten Group.

Karesau.—A small island in the Schouten Group.

Mokmer.—? Locality. (Friederici gives one word—*rum*, house.)

ALI GROUP. This falls into two sub-groups :—**(a) Ali sub-group :**

Ali.—Island in Berlinhafen.

Seleo (Saliu) and Angel.—Islands in Berlinhafen, east of Ali.

Lalep and Yamir (Jamir).—Mainland opposite Berlinhafen.

Yakamul.—Mainland east of Lalep.

Paup.—Coast west of Yakamul.

Ulau and Sueng (Sauvein, Suein).—Mainland east of Yakamul.

Wokau.—Coast south of Berlinhafen.

(b) Tumleo sub-group :

Tumleo (Tamara).—Island in Berlinhafen, west of Ali.

Ser.—Mainland west of Tumleo.

Sissano.—Mainland west of Tumleo.

YOTAFI GROUP.

Yotafi.—Humboldt Bay.

Ingros.—Humboldt Bay.

Yenbi, Imbi.—Outer Humboldt Bay.

Entsau.—Humboldt Bay.

Tobadi.—Humboldt Bay.

*Papuan Languages.***KAI GROUP.¹**

Kai or Katedong.—(Bush language.) Between Rivers Bubui and Bussim, in hinterland of Finschhafen.

(Simbang in villages of Adeguamassa, Saleng and Jabim, inland from Finschhafen.)

¹ The language on the Waria River at the British Boundary, south of Huon Gulf is Papuan, and related to the Binandele. One word is given of the Morobe language at Adolphafen.

KAI GROUP—continued.

- Poom.—(Bila, Soging, Bussim).—Villages north of Finschhafen, about Stations Cape.
- Kamoka.—Village near Cape King William.
- Pong.—Village near Cape King William.
- Keseraua.—Village 5 km. from Pong.
- Ago.—Village by Festunkhut, south of Cape King William.
- Kelana Kei.—Hinterland of Kelana.
- Waso.—Indiga village, inland by Kabenau River.

BONGU or ASTROLABE GROUP.

- Gorendu.—Village west of Constantinhafen (removed in 1896 to Bongu).
- Gumbu.—Village east of Constantinhafen (removed to Bongu).
- Bongu.—Village in Constantinhafen.
- Bogajim (Bogati, Bogadschim).—Village of Bogajim on coast near Stephansort.
Inland villages of Tauar on Mingjengja River and Bauar on Jorja River.
- Burumana (Manikam).—Left bank of Kabenau River on ridge of coast range.
- Shongu (Dshongu).—South of Gorendu, south-east of Manikam, east of Kabenau River.
- Wuang (Wuong).—Inland from Bongu.
- Kaliko and Jimjam.—Kabenau River.
- Damun.—On watershed between Kabenau and Kiortal, on west bank of Kabenau River.
- Koliku.—Probably the same as Kaliko.
- Male (Gambanga).—Village south-west of Koliku, north-west of Burumana, at foot of Mount Constantine.
- Langtub.—Village on the Maclay coast.
- Sungumana.—Inland mountain village beyond the Kabenau River.
- Maragam.—Coast east of Bongu and Cape Novosilsky, on right bank of Kole River.
- Rumba.—Village west of Cape Rigny, near mouth of Kabarang River.
- Englam.—Mountain village north-east of Sungumana.
- Kadda.—Village on east side of Kabenau River, at extremity of the coast plateau.
- Wenke.—Village on left bank of Minjingja River, and up the Minjingja River to Mount Finisterre.
- Panim.—Village 10 km. inland, south-west of Friedrich Wilhelmshafen.
- Mis.—Village 7 km. inland, west of Friedrich Wilhelmshafen.
- Kemba.—Village 15 km. west of Friedrich Wilhelmshafen.
- Nupanob.—Village in Haasemann Mountains, 10 km. north-west of Friedrich Wilhelmshafen.

BONGU or ASTROLABE GROUP—*continued.*

Bawaipa.—Village north of Haaseman Mountains.

Misdao.—Village 15 km. north of Friedrich Wilhelmshafen.

Rempin (Erempin, Yrempi).—Village 18 km. north of Friedrich Wilhelmshafen, and coast between Cape Juno and Alexishafen.

Bunu.—Village 20 km. north of Friedrich Wilhelmshafen, by Cape Croisilles (near Sarang).

Matagar (Matugas, Matuka).—Coast between Cape Juno and Cape Croisilles, north of Rempin.

HATZFELDTSHAFEN GROUP.¹

Tombenam.—Village in Hatzfeldthafen. Also villages of Dugumor, Bielau, Kaiten, Ubudoib, Tsimbin, etc.

Dagoi.—East end of peninsula formed by Bogiahafen.

Monumbo.—Village and district east of Ranu River at Potsdamhafen.

Alepapum.—Village south of Monumbo.

Kopar.—Village at mouth of Kaiserin Augusta River.

Mangut.—Village at mouth of Kaiserin Augusta River.

Mabu.—Village at mouth of Kaiserin Augusta River.

Watam.—Village at mouth of Kaiserin Augusta River.

Zenap (Tsenap).—Village on Kaiserin Augusta River.

Mangi.—Village on Kaiserin Augusta River, west of Zenap.

Malu.—Village on Kaiserin Augusta River.

Jamboni.—Village on Kaiserin Augusta River.

Murik.—Coast west of Augusta River.

Kaip.—Cape Dallmann district.

. . . .—Dallmannhafen district.

Muschu.—Muschu (D'Urville) Islands, north of Dallmannhafen.

KAVU GROUP.

Sawum.—Coast west of Muschu Island.

Dakur (Dagur).—Dagur and Vatai, coast west of Muschu.

Belam.—On west spur of Alexander Mountains.

Kavu (Kawu).—On coast between Muschu Island and Sueng.

Matepau.—Inland.

Kumemim.—Inland.

Put.—On coast west of Kavu.

Smain.—On coast west of Put.

VALMAN GROUP.

Valman (Walmann, Leming).—Mainland east of Berlinhafen.

¹ The languages here grouped together probably fall into several subdivisions.

VALMAN GROUP—*continued.*

Vrinagol.—In Valman district.

Akur.—In Valman district.

Vokau (Wokau).—In Valman district.

Tsinapali.—Inland from Valman district.

Anal.—Inland from Valman district.

Kopoam.—Inland from Eitape, west of Berlinhafen.

Arop.—On Takon River, north-west of Berlinhafen.

Malol.—North-west of Berlinhafen, on coast.

Varopu (Warupu).—Two small islands in lagoon north-west of Berlinhafen.

Nori.—West of Varopu between Ser and Leitere.

Leitere.—Pile village half-way between Cape Baudissin and Angrifshafen.

Wanimo.—In Angrifshafen district.

Waromo.—In Angrifshafen district, west of Wanimo.

Yako.—In Angrifshafen district, west of Waromo.

Wutung.—In Angrifshafen district, west of Yako.

Seko.—Village west of Tami River, east side of Humboldt Bay.

4. NOTE ON ORTHOGRAPHY.

In native words as here written the vowels are pronounced as in German, and the consonants, with a few exceptions, as in English, but *n̄* = *ng* in “sing,” *t̄* or *ty* is palatal, *r̄* is a palatal *r* = *ry*, and *d̄* or *dy* a palatal, *y* has been substituted for the German *j*, and *j* in this list has the English sound (German *dsch*), *ġ* or *γ* is the Dutch *g* in “*gij*,” *χ* is the German *ch* in “*ach*!”

5. NOTES ON GRAMMAR.

1. NOUNS.—The Melanesian languages show the two classes of nouns, marked by a difference in the form of the possessive pronoun. The suffixed pronoun is used with names of parts of the body, relations, etc., whilst other names take a separate possessive word with suffixed pronoun. Some examples of suffixed pronouns are :

—	Tami.	Yabim.	Bilibili.	Karkar.	Ali.	Tumleo.
Sing., 1st Pers. ...	... <i>-ñ</i> ...	... <i>-o</i> ...	... <i>-ñu, ñ</i> ...	... <i>-k</i> ...	... <i>k</i> ...	... <i>k</i>
2nd Pers. ...	... <i>-m</i> ...	... <i>-m</i> ...	... (vowel) ...	... (vowel) ...	... <i>m</i> ...	... <i>m</i>
3rd Pers. ...	... <i>-na</i> ...	... (vowel) ...	... <i>-n</i> ...	... <i>-n</i> ...	... <i>ñ</i> ...	... <i>n</i>

Possessive words. Some of these prefix the full pronoun :

—	Tami.	Yabim.	Karkar.	Ali.	Tumleo.
Sing., 1st Pers. ...	... <i>kan̄</i> ...	... <i>ño, ai-ño</i> ...	... <i>ñai-nek</i> ...	... <i>eowen̄</i> ...	... <i>auosen</i>
2nd Pers. ...	... <i>kam</i> ...	... <i>nim, aum-nim</i> ...	... <i>onga-ne</i> ...	... <i>yicn̄</i> ...	... <i>yiyien</i>
3rd Pers. ...	... <i>kan</i> ...	... <i>ni, eni</i> ...	... <i>inga-nen</i> ...	... <i>enen̄</i> ...	... <i>yeiyeien</i>

In the Papuan languages nouns are often declined by suffixes, though nominative, accusative and genitive are usually indicated by their position in a sentence.

KAI : *muma*, father ; nominative, *mama-dzi* ; locative, *mama-he* ; vocative, *mama-mai*.

BONGU : Nominative, *gītañ*, stone ; genitive, *gītañ andam* (stone of-it) ; dative, *gītañ-gā* ; instrumental, *gītañ-en* ; locative, *gītañ-gu* ; vocative, *ō gītañ*.

BOKAJIM : *kiniele-ra*, for children ; *palam-na*, with arrow ; *namyuo-ka*, on the fire.

2. PRONOUNS.—These are numerous in both Melanesian and Papuan languages. Some of the former maintain the distinction between the inclusive and exclusive forms of the plural and dual pronouns, but in others it does not appear (*cf.* Ali, Tumleo). In a few Papuan languages, on the other hand, the distinction appears to be made (*cf.* Kai). Some languages in both groups have dual, trial or quadral forms, and two Papuan languages—Monumbo and Valman—indicate gender in the 3rd person.

The pronominal forms appear as follows :

MELANESIAN PRONOUNS.

—	1st Person.	2nd Person.	3rd Person.
Tami	<i>Sing.</i> (ne)yau <i>Plur.</i> (niñ)git, <i>inclus.</i> (niñ)gai, <i>exclus.</i> <i>Dual</i> (niñ)gitalu, <i>inclus.</i> (niñ)gailu, <i>exclus.</i> <i>Trial</i> (niñ)gitato, <i>inclus.</i> (niñ)gaito, <i>exclus.</i>	(ne)gom (niñ)gam (niñ)gamlu (niñ)gamto	yai siñ silu sito
Yabim	<i>Sing.</i> ai <i>Plur.</i> aia <i>Dual</i> aiagi, agi	aum ama amagi	eñ esia, esea esiagi, agi
Kelana	<i>Sing.</i> yau	yom	—
Rook Is.	<i>Sing.</i> yau	yo	—
Kaimanga	<i>Sing.</i> ñon	nu, yum	—
Tuom	<i>Sing.</i> yau <i>Plur.</i> id, <i>inclus.</i> yaiña, <i>exclus.</i> <i>Dual</i> ituru, <i>inclus.</i> yairu, <i>exclus.</i> <i>Trial</i> itol, <i>inclus.</i>	yumsi, yum yam yamru yamtol	ñcovi, nug — — titor
Mantok	<i>Sing.</i> yau <i>Dual</i> ituru, <i>inclus.</i>	yam	neu
Bilibili	<i>Sing.</i> ña <i>Plur.</i> ñnd, <i>inclus.</i> a, <i>exclus.</i>	o añ	i i
Karkar	<i>Sing.</i> ñai <i>Plur.</i> nam, <i>inclus.</i> id, <i>exclus.</i> <i>Dual</i> nungom uraru, <i>inclus.</i> nungod uraru, <i>exclus.</i> <i>Trial</i> nungom utol, <i>inclus.</i> nungod utol, <i>exclus.</i>	enge añ — —	inge iñ — —

Melanesian Pronouns—*continued.*

—	1st Person.	2nd Person.	3rd Person.
Siar-Ragetta (Graget)	<i>Sing.</i> ña <i>Plur.</i> id, <i>inclus.</i> am, <i>exclus.</i> (<i>Dual</i> idausün, <i>inclus.</i>) (amausün, <i>exclus.</i>) (<i>Trial</i> itöl, <i>inclus.</i>) (amtöl, <i>exclus.</i>)	o añ (añausün) (añtöl)	i idi (iausün) (itöl)
Sarang	<i>Sing.</i> nai <i>Plur.</i> nam, <i>exclus.</i> <i>Dual</i> toru	o añ —	i idi —
Manam	<i>Sing.</i> ñau	aio, kaiko	ñai
Hansa V.	<i>Sing.</i> ñnau	ñnai	—
Karesau	<i>Sing.</i> kiau	yek	—
Ali	<i>Sing.</i> eo <i>Plur.</i> yit <i>Dual.</i> trit, tit	yi am treñ, teñ	eñ re treñ, teñ
Yakamul	<i>Sing.</i> eo <i>Plur.</i> yúk <i>Dual</i> ati	yi am —	yeñ ri —
Ulau	<i>Sing.</i> geau <i>Plur.</i> yit	yi am	wui ari
Tumleo	<i>Sing.</i> aueo <i>Plur.</i> etet	yi yi amem	yeiyei rere
Yotafa	<i>Sing.</i> ner <i>Plur.</i> siberi	ter simi	der deriki

PAPUAN PRONOUNS.

Kai	<i>Sing.</i> no(ni) <i>Plur.</i> nongo, <i>inclus.</i> nonge, <i>exclus.</i> <i>Dual</i> noha, <i>inclus.</i> nohe, <i>exclus.</i>	go(gi) ñonge ñohe	e(gi) yange yahe
Pong	<i>Sing.</i> na	ga	yaña
Keseraua	<i>Sing.</i> na	ga	yaña
Kelana Kei	<i>Sing.</i> nai	ñe	—
Gorendu	<i>Sing.</i> adyi	ni	nadi
Bongu	<i>Sing.</i> ad'i <i>Plur.</i> jig, <i>inclus.</i> gā, <i>exclus.</i> <i>Dual</i> jal, <i>inclus.</i> gal, <i>exclus.</i>	nī nid'i nil	andu nad'i nal
Bogajim	<i>Sing.</i> edju, dju, e <i>Plur.</i> iga <i>Dual</i> ago <i>Trial</i> ika	ni nango, niñgi ago, naraluo ika	are, a nango, nañgi — —
Manikam	<i>Sing.</i> dya	—	—
Burumana	<i>Sing.</i> d'a <i>Plur.</i> ga, <i>exclus.</i>	ni —	aro —
Kaliko	<i>Sing.</i> dya	ny	—
Koliku	<i>Sing.</i> d'a <i>Plur.</i> ga, <i>exclus.</i>	ni —	aro —
Male	<i>Sing.</i> d'a <i>Plur.</i> ga, <i>exclus.</i>	ni —	aro —
Langtub	<i>Sing.</i> i	ne, ni	—

Papuan Pronouns—*continued.*

—	1st Person.	2nd Person.	3rd Person.
Sungumana	<i>Sing.</i> d'a <i>Plur.</i> niŋga, <i>inclus.</i> ... ga, <i>exclus.</i>	ni indo	andu —
Maragam	<i>Sing.</i> je <i>Plur.</i> ine, <i>exclus.</i> ...	ni —	taŋgumun —
Panim	<i>Sing.</i> isi <i>Plur.</i> ige	ine, hine, ne ... age	hebod heage (?)
Mis	<i>Sing.</i> da <i>Plur.</i> ige	na age	nug —
Nupanob	<i>Sing.</i> da, ta, ita ... <i>Plur.</i> ige, igam ...	na, u —	— —
Kemba	<i>Sing.</i> da	—	—
Rempin	<i>Sing.</i> da	—	—
Bunu	<i>Sing.</i> ya	—	—
Tombenam	<i>Sing.</i> inor, emaka ...	eingor	—
Monumbo	<i>Sing.</i> ěk <i>Plur.</i> im <i>Dual</i> ip	tsĕk um up	niñ <i>masc.</i> , uk <i>fem.</i> , mĭk <i>child</i> , ĭk <i>thing</i> miñ <i>masc.</i> , mbok <i>fem.</i> , <i>child</i> , <i>thing</i> măk <i>masc.</i> , văk <i>fem.</i> , băk <i>child</i> , manaman <i>thing</i>
Watam	<i>Sing.</i> yak <i>Plur.</i> —	u —	min min
K. Augusta River ...	<i>Sing.</i> nun	men	—
Kavu	<i>Sing.</i> ayuk <i>Plur.</i> apak	nak ipak	anan keit'enak
Valman	<i>Sing.</i> kum <i>Plur.</i> kibin	t'i t'im	runon <i>masc.</i> , ru <i>fem.</i> ri

3. VERBS.—The verb in the Melanesian languages is conjugated (as elsewhere) by means of particles which, as in British Papua, often have the appearance of abbreviated pronouns.

—	Tami.	Yabim.	Bilibili.	Karkar.	Ali.	Tumleo.
Sing., 1st Pers. ...	a ...	ya, ga, ta ...	na, ne, ni, no, nu...	n, ni ...	ne	na
2nd Pers. ...	gu, go...	u(o), gu(go), ta ...	o, u, w ...	o, u ...	wō	ka
3rd Pers. ...	—	e, ge(gi), ta ...	i, y ...	i ...	na	ka
Plur., 1st Pers., <i>inclus.</i>	ta ...	a, a, ta ...	{ tă, tĕ, tŭ ...	ma ...	} ta	ta
1st Pers., <i>exclus.</i>	ga ...					
2nd Pers. ...	ga ...	a, a, ta ...	ă, ă, ǒ ...	a ...	a	ka
3rd Pers. ...	si ...	se (si), se (si), ta (te, ti)	dă, dĕ, dŭ, dō, dŭ ...	ti ...	ra	ra

The Papuan verb is complicated. The subject and object of transitive verbs are incorporated in the verbal form. Tense is indicated by change of prefix or

suffix. In Monumbo verbs change for gender. Some examples of Papuan forms are :—

KAI :

<i>bahe</i> , I make.	<i>bapa</i> , I made.	<i>nale</i> , thou givest me.	<i>naleo</i> , he gives me.
<i>ba</i> , thou makest.	<i>bame</i> , thou madest.	<i>galepe</i> , I give thee.	<i>lanepe</i> , I give him.
<i>bao</i> , he makes.	<i>baye</i> , he made.	<i>galeo</i> , he gives thee.	<i>lane</i> , thou givest
		<i>laneo</i> , he gives him.	him.

BONGU :

<i>nī ad'i īmejen</i> , thou givest me.	<i>nadī ad'i ībeb</i> , they give me.
<i>andū ad'i ībejen</i> , he gives him.	<i>ad'i andū ūmem</i> , I give him.
<i>nīdī ad'i ībeb</i> , you give me.	<i>ad'i andū ūmuren</i> , I gave him.
<i>ad'i nī īmem</i> , I give thee.	<i>nī ad'i ībarmejen</i> , thou wilt give me.

MONUMBO :

<i>ek tsek ańba</i> , I strike thee.	<i>ek ańba</i> , I strike.
<i>ek niń ańbat</i> , I strike him (man).	<i>tsek tsuńba</i> , thou strikest.
<i>ek uk ańbak</i> , I strike her (woman).	<i>niń nuńba</i> , he strikes.
<i>ek mik ańbam</i> , I strike it (child).	<i>uk uńba</i> , she strikes.
<i>ek ik ańbap</i> , I strike it (thing).	<i>mik mimba</i> , it (child) strikes.
	<i>ik ińba</i> , it (thing) strikes.

4. NUMERALS.—The Melanesian numerals are very like those in British New Guinea. The words for “ five ” and “ ten ” are formed from the word *lima*, “ hand ” or “ five.” The word for “ twenty ” is often formed by means of the word for “ man.”

Some of the Papuan languages appear to have a limited numeration ; others seem to have imitated Melanesian expressions.

MELANESIAN NUMERALS.

Tami ...	1. te 6. lim-ma-te	2. lu 7. lim-ma-lu	3. tol 8. lim-ma-tol	4. pat 9. lim-ma-pat	5. lim 10. lim-anta-lu	20. damo-mon-te
Bukaua ...	1. doń 6. lemań-dań-anuta	2. lu 7. lema-ńanu-lu	3. tu 8. lema-ńanu-tu	4. ale 9. lema-ńanu-ale	5. lim-dań 10. sahu	20. nasamu-lim-dań
Yabim ...	1. teń 6. lemeń-teń-ńanu-ta	2. lu 7. lemeń-teń-ńanu-lu	3. tilia 8. lemeń-teń-ńanu-tilia	4. ale 9. lemeń-teń-ńanu-ali	5. lemeń-teń 10. lemeń-lu	20. ńa-samu
Suam ...	1. teń 6. lemeń-anu-tā	2. luagi, lua 7. lemeń-anu-lu	3. tilia 8. lemeń-anu-tilia	4. āli 9. lemeń-anu-āli	5. lēmēń-teń 10. leme-ru	20. nāsāmu
Kelana ...	1. esemogon 6. lemeń-me-esemogon	2. lua 7. lemeń-me-lua	3. tolu 8. lemeń-me-tolu	4. pana 9. lemeń-me-pana	5. lemeń-tasili 10. lemeń-ta-lua	20. ńelo-mali-sińa
Rook Is. ...	1. emogon 6. lim-b-es	2. ru 7. lim-be-ru	3. tol 8. lim-be-ru-toru (?)	4. pań 9. lim-be-ru-pan (?)	5. lim 10. sańul	20. tamo-te
Tuom ...	1. ės 6. lim-be-es	2. ru 7. lim-be-ru	3. tol 8. lim-be-tol	4. pań 9. lim-be-pan	5. lim 10. sańul, sańavul	20. tamo-tte

Melanesian Numerals—*continued.*

Bilibili ...	1. kukun 6. kukun- kete	2. oru 7. kukun-oru	3. toli 8. kukun- toli	4. pali 9. kukun- pali	5. lima-ta 10. liman- oru	20. kukun- tama (kukun- giteŋan)
Mitebog ...	1. olam 6. —	2. — 7. —	3. — 8. —	4. — 9. —	5. — 10. liman- oru	20. —
Karkar ...	1. kasek 6. bani- sékun- kasek	2. uraru 7. banin- sekun- uraru	3. utol 8. banin- sekun- utol	4. ivévo 9. banin- sekun- ivevo	5. bāni(n) 10. banin- enenda- imat	20. niŋ- enenda- imāt
Siar- Ragetta (Graget) ...	1. taimon 2. dāymōn 6. tikūn- dāimōn	2. asu 7. āsu 7. tikūn- asūgn	3. tol 3. tōl 8. tikūn- tōlgn	4. pal 4. pāl 9. tikūn- pālgn	5. liman- ainta 5. nimāgē- sau, nima- gāntā 10. nimāgāsu	20. nimā- gāsu- nēgāsu
Sarang ...	1. sekmone 6. —	2. raru 7. —	3. tol 8. —	4. anekane 9. —	5. kurum-sa 10. aitiŋi	20. —
Manam ...	1. tee 6. lima-tee	2. rua 7. lima-rua	3. toli 8. lima-toli	4. oati 9. lima-oati	5. lima 10. u-lemo	20. —
Wogeo ...	1. ta 6. barāgo	2. rue 7. be-tōl	3. tōl 8. kiki-rue	4. kwik, kūik 9. kiki-vat	5. bōχōbā, bōkōbā 10. usu	
Keule ...	1. ta 6. (kwik) barāgō	2. ru 7. kwik- betōl	3. tol 8. kiki-ru	4. kwik 9. kiki-ru- bōχōbā	5. (kwik) bōχōbā 10. kiki-ru- barāgō	
Hansa V....	1. tee 6. lima-tee	2. rua 7. lima-rua	3. tōli 8. lima-tōli	4. oāti 9. lima-oāti	5. lima 10. u-lemma	20. ulem- tamata —
Ali ...	1. tei 6. lim-am-tei	2. ro 7. lim-an-ro	3. tul 8. lim-an-tul	4. au 9. lim-an-au	5. lim 10. wu-lim	20. wulim- ro-sapih
Saliu ...	1. tai 6. lim-am- tai	2. rō 7. lim-an-ro	3. tul 8. lim-tul	4. au 9. limau	5. lim 10. u-lim	20. —
Yamir ...	1. ti 6. lima-m-ti	2. rō 7. liman-ro	3. tel 8. lim-tel	4. au 9. lim-au	5. lim 10. napet- sapih	20. —
Yakamul	1. matei 6. lime-tei	2. ro 7. —	3. tel 8. —	4. au 9. —	5. lim 10. wu-lime- tei	20. wu-lim- ro
Ulau-Sueng	1. patai 6. ayekalun- patai	2. ru 7. —	3. tūl 8. —	4. worawiŋ 9. —	5. ayekalun- pata 10. ewut'- patai	20. ewut'-ro
(Sauvein)...	1. tai 6. lima-m-ta	2. ru 7. —	3. tul 8. —	4. au 9. —	5. lim 10. —	
Tumleo ...	1. pa-mata 6. lima-na- mata	2. pa-lo 7. —	3. pa-tul 8. —	4. pa-u 9. —	5. pa-leim 10. wo-lim	20. wo-lim- ro
Sissano ...	1. bondenen 1. the 6. māndōsīm	2. ildin 2. ros 7. marondi	3. — 3. for, tor 8. rondisnika	4. — 4. au, aw 9. rondumi- nase	5. — 5. mimiām, miniān 10. rondu- minarōs	20. manisa- yām

PAPUAN NUMERALS.

Kai ...	1. mo	2. yahe, yeyahe	3. yahe-a-mo	4. yahe-a- yahe	5. me-mo- mole	20. ni-mo
	6. me-mo-a- mo				10. me- yeyahe	
Bussim ...	1. mōa, mōnako	2. yāhēka	3. hāraba	4. hifōre	5. mē-mōa	
	6. hīngm- mōa	7. hīnī-hāhē	8. hīnī- harabōa	9. hīnī- hifore	10. mē-yāhē	20. nī-mābū
Bila ...	1. mōni	2. yahēka	3. hāba	4. hābā-kañ	5. mōle-mōni	
	6. —	7. mōle- mōni- ikōa-yahē	8. mōle- mōni- ikoa-hāba	9. —	10. mōle- yāhē	
Poom ...	1. moa, mōni	2. yaheka	3. haba, hāraba	4. habakañ, hifōre	5. mōni, mē- moa	
	6. hine-moa	7. —			10. mōle-hai	
Kamoka ...	1. taūe	2. ledsem	3. saun	4. wōsok	5. qandambu	
Pong ...	1. wene	2. etka	3. karaña	4. kotpa	5. metam	
	6. irina-wene	7. irina-etka	8. irina- karanua	9. irina- ekotpa	10. metetka	
Kelana Kei	1. weku	2. aetke	3. karaue	4. mange	5. mete- mane	
	6. weko-so- mete- mane	7. aetke-so- mete- mane	8. karaue- so-mete- mane	9. mange- so-mete- mane	10. meta- etke	20. metaetke- so-kiaetke
Gorendu ...	1. kudyi	2. ali	3. alub	4. gorle	5. ibon-be	
	6. igle-be	7. igle-ali	8. igle-alub	9. igle-gorle	10. ibon-ali	20. samba ali
Bongu ...	1. gud'i	2. ali	3. galub	4. gōgole	5. ibon-gud'	
	6. ibon- e(n)gele- gud'i	7. ibon- e(n)gele- ali	8. ibon- e(n)gele- galub	9. ibon- e(n)gele- gōgole	10. ibon- alali	20. ibon- alali- samba- alali
Bokajim ...	1. kud'ai, hujai	2. ayil, ael'de	3. galub, alubde	4. golerer, gorlede	5. bañ- kud'ai, bañ- hujai	
	6. gala- hujai	7. gala- ael'de	8. gala- alubde	9. gala- gorlede	10. ban- ael'de	20. siña-aiel
Manikam	1. kudšak	2. nalu	3. winoya	4. bar	5. —	
Burumana	1. gud'i	2. —	3. galub	4. gōgole	5. bar-gud'i	
Koliku ...	1. gud'i	2. lili	3. galub	4. gōgole	5. bar-gud'i	
Kaliko ...	1. gujera	2. lili	3. kalubi	4. gōgole	5. boḡalele	
Male	1. gud'i	2. lili	3. galub	4. gōgole	5. bar-gud'i	
Damun ...	1. gujera	2. lilo	3. tumban	4. tumalilo- tumalilo	5. —	
Langtub ...	1. ndaimon	2. lālā	3. keipi	4. bōdi	5. kulonde kulo- ndaimon	
	6. kolun- patun- ndaimon	7. —	8. —	9. —	10. kula-la	20. kabe- lala
Sungum ...	1. gud'i	2. lilo	3. galub	4. —	5. bar-gud'i	
Maragum	1. duaiñ	2. ar	3. kiñ	4. —	5. —	20. —
Rumba ...	1. doaying	2. arumba	3. keñba	4. ualkumba	5. woi-andelu	
	6. woi-ande- paka- rumba					
Englam ...	1. taimom	2. aru	3. toli	4. pali	5. lima-ta	
Panim ...	1. ölüfān	2. əlis	3. izəd	4. woalai	5. māmāgai	
	6. ebēn-nahe	7. ebēn-əlis	8. ebēn-izəd	9. ebēn- woalai	10. mama- gūnūm	20. gu- gunum

Papuan Numerals—*continued.*

Mis ...	1. usis, usif 6. gurole, gugole	2. arit 7. gu-arit	3. kiam 8. gu-kiam	4. varos 9. gu-varos	5. tanigole 10. evel- leplep	
Nupanob	1. laipo	2. asit, ađit	3. evam	4. wađele	5. tanigole, tanige	
Rempin ...	1. atel 6. —	2. eil 7. —	3. abu 8. —	4. walik 9. —	5. heta 10. hibeka tabel	
Tombenam	1. undala, nda (p) 6. ikur- mara- unda	2. ner 7. ikur- maran- ner	3. narop 8. ikur- maran- narop	4. naramban 9. ikur- maran- naramban	5. ikur 10. ombener	20. moande
Dagoi ...	1. naia 6. iku-nara- unda	2. nner 7. iku-nara- nner	3. arob 8. iku-nara- narob	4. naramban 9. iku-nara- mbam	5. kur 10. a-um- bene	20. moande
Monumbo	1. takua 6. na-takua- takua	2. tsaipe 7. na-takua- tsaipe	3. tsaipe- takua 8. na-takua- tsaipe- takua	4. tsaipe- tsaipe 9. na-takua- tsaipe- tsaipe	5. na-takua 10. noañ	20. inambo
K. Augusta River	1. uarra 6. uonara 1. nak 6. čergagelag 1. kela 6. ambun	2. bñsi 7. — 2. vila	3. nomu 3. kovuk	4. hau-us 4. einak	5. nondo 5. taambem	
Watam ...	1. gaku	2. noini	3. giramo	4. pourek	5. rapun 10. par-niñ	
Dagur- Vatai	1. ätš, ätin 6. nēbat-viē	2. biē 7. nēbat-bi- hätš	3. bi-hätš 8. nēbat-biē- biē	4. nēbati 9. nēbat- bihätš-biē	5. nēba-hätš 10. ānauhip	
Kavu ...	1. atin	2. piät	3. pit'atin	4. nemat'it	5. anauvip 10. vivis	
Vrinagol ...	1. älpä 6. klāgaulün- älpä	2. viē, viei 7. klāgaulün- viē	3. viēñö 8. klāgaulün- viēñö	4. vie-viē, viei-vēē	5. klāgaulün 10. klāgaulün- klāgaulün	
Valman ...	1. alpa	2. viei	3. viei-ño	4. viei-viei	5. klag(o)- olun 10. klagolun- klagolun	
Akur ...	1. nöntö	2. bñai	3. biē-ño	4. bñai-bñai	5. bñai-bñai- älpä	
Anal ...	1. lotaiye	2. rounke	3. rounke- lo-taiye	4. rounke- rounke	5. rounke- rounke- lotaiye	
Arop ...	1. puntanen	2. eltin	3. eltin- puntanen	4. eltin-eltin	5. eltin-eltin- puntanen	
Leitere ...	1. opä 6. nō-meyu	2. yēmonö 7. nō-menö	3. enö 8. nōyu	4. nō 9. nōyu-meu	5. nō-meu 10. nōyu- meyu	
Wanimo ...	1. opä 6. nō- meneyu	2. yūmönö 7. nō- menehen- du	3. enu 8. nuyu	4. nō 9. nuyu- mēneau	5. no- mēneau 10. nuyu- meneyu	

Papuan Numerals—*continued.*

Yako	...	1. opă 6. nō- meneyu	2. yumōnō 7. nō-mene- henu	3. enu 8. nōyu	4. nō 9. noyu-va- mēneau	5. nō-mēnau 10. nōyu-va- meneyu, moti
Wutung	...	1. aŭfă 6. nō-tiō	2. nōmōă 7. nō-tīnyo	3. henō 8. nō-ti-henō	4. nō-naŭ 9. nō-tīnaŭ	5. wi 10. wi-tyă-wi

5. VOCABULARY.—In the vocabulary I give as far as possible the equivalents of twenty words in the languages of Northern Papua. These show many agreements between the Melanesian languages of the region and those of the islands and British New Guinea (*cf.* Vocabularies in the *Report of the Cambridge Expedition*), but there are great differences in the Papuan vocabularies.

MELANESIAN VOCABULARY.

—	1. Areca Nut.	2. Banana.	3. Bird.	4. Coco-nut.	5. Dog.	6. Ear.	7. Eye.	8. Fire.	9. Fish.	10. Foot, Leg.
Tami	mbu	pun...	man	niñ	kouñ, kaua	talina	mata	ya	i	ge
Bukaua	mbu	há	ma	nip	giam	dana-laun	mata	ya	i	ahi(n), hai(n)
Yabim	mbu	hm, m	mo	nip	kiam	taña	mata	ya	i	akai(n)
Suam	—	—	mó	nip	kiam	tañelun	mata(nu)	yá	i	hentápe, henkentei
Kelana	dabali	pundi	manu	niu	gabun	—	—	yap...	iga	age(n)-dap
Rook Ia.	—	pun...	man	niu	gabun	talina	mata	yep...	ig	age(n)
Kaimanga...	mbu	pín	man	niu	me	—	—	ie	ie	agen
Tuon	—	un	man	niu	gawun	talina	matañ	i	i	agen
Mantok	—	pūn	—	niu	gawun	talina	matañ	i	i	agen
Sigap	—	pūn...	—	niu	gaon	tañak	matam	—	—	gem
Bilibili	yem (yemb)	hundi	doru (mo, ma)	nihu (niu), neō	gaun (gaon)	tin-lan, tinri	mala	ya	bali (ie)	nie(n), galin
Mitebog	—	—	—	niu	—	awa(n) ?	mala(n)	ya	—	nie(n)
Bob	—	—	—	niu	—	—	—	—	—	—
Szeak-Bagili	māsi, meel	fut, mug	—	niu	gaun	kōkote(d)	māta(d)	ya	—	—
Karkar	yep	fud	ananganak	niu	gaun	kukudo(n)	māla(n)	yai	ij	nie(n)
Siar-Ragetia	—	fute...	ma	niu	gaun	telina(n)	mala(n)	ije	ije	nie(n)
Greget	igb	fud	mā	niu	gaun, ngaun	tlina(k)	māla(k)	ia, ai	iyē	ne(k)
Sarang	—	—	moluk	—	—	kutudōk	matar	yai	if	—
Manam	—	udi	—	—	—	uni	mata	—	—	—
Hansa V.	mhoa	udi	mañ	niu	eo	un-ego	matago	coa	ia	—
Wokeo	—	—	man	ni	ke	tal'nā	—	lowā, yowā	—	—
Keule	—	—	—	—	ke	talina	—	—	—	—
Karesau	—	—	man	—	winau	—	—	—	—	—
Ali	po	wur...	mien	niu	auñ...	tanae(k)	matekrik	lip	waa	lawek
Seleo	—	—	miñ	niu	aun	—	—	—	vaa...	—
Yamir	—	—	min...	niu	aun	—	—	—	vāa...	—
Yakumul	po	wud, vut'	mien	niu	auñ...	tanakeik	matekrik	lih, lie	hāai	lahak
Paup	—	vut'	mien	neu	auñ...	tānakaik	—	liēt	fāai	—
Ulau-Sueng	bó	hud...	man	neu	abauñ	tarakeik	matekrik	yah...	wolūt	arih
Tumleo	po	waur, wör	mien	neu	aun	tanarapik	matalañek	yep...	paap	auwit'alik-peity

i Malol, neu.

Melanesian Vocabulary—continued.

—	1. Areca Nut.	2. Banana.	3. Bird.	4. Coco-nut.	5. Dog.	6. Ear.	7. Eye.	8. Fire.	9. Fish.	10. Foot, Leg.
Ser...	—	bur...	main	—	mbin	nirepok	tawelukug...	—	—	—
Sissano	po ...	—	mān	neu...	aun...	—	windu, wente	—	—	—
Yotafa	pugu	urageyuki	mān	nino, niu	hoi...	tēni...	—	aidyāri	igeh	aya
Ingros	—	—	—	niu ...	konye	tinye	—	—	igē ...	—
Yenbi	—	—	—	—	—	tinya	—	—	igē ...	—
Eatsau	—	—	—	niu ...	konye	—	—	ai ...	igē ...	—
Tobadi	—	ure ...	—	niu ...	kauno	tēnye	—	—	igē ...	—

—	11. Hand, Arm.	12. House.	13. Man.	14. Moon.	15. Pig.	16. Stone.	17. Sun.	18. Tooth.	19. Water.	20. Woman.
Tami	lima	panu, lum ²	damo	kayo	mbol	pa ...	kot ...	nau	lan ...	diwi
Bukaua	lama	gemen	namala	ayu	bo ...	—	a ...	loi ...	bu ...	lugui
Yabim	lena	andu, lum ²	namala	ayun	bo ...	po ...	o, oa	luh ...	bū ...	awi, auwi
Suam	lemen	andu, lum ...	na ...	abumtau-	bō ...	—	abumtau ōa	lūn ...	bu ...	palina
Kelana	lemei-dap ¹	ruma	tamtamon ...	keiwo	bōre	maeto	lavangá	—	yau	siliva
Rook Is.	lima(n)	rum	tamtamon ...	kaio...	gai, ngai, ŋe	mait	dagi, ās	livu(n)	ya ...	siliva
Kalmanga...	—	rum, urum ²	—	—	ŋe ...	—	nzōn	—	yōp, yōk	—
Tuom	niman	rum...	—	kayo	gai ...	mait	ās ...	livon	tagunia	pain
Mantok	limad	rūm	ditamo	kayo	nai ...	yām	ndāg	livōn	yā ...	dilive
Sigap	baum	—	—	—	bōr ...	—	—	ninōn,	lo	—
								ninop		

¹ Cf. tāppā, root.² Men's or club house.

Melanesian Vocabulary—continued.

	11. Hand, Arm.	12. House.	13. Man.	14. Moon.	15. Pig.	16. Stone.	17. Sun.	18. Tooth.	19. Water.	20. Woman.
Bilibili	lima(n) (nīman)	amb, daren ¹	tamol (tomōl)	znāsin (sinasin)	bōr ...	pat, bati, pātē	ān (and), ant	luon-te (livon)	you, ŷo, yō...	pain
Mitebog	lima(n)	ad ('? ab)	tomol	—	—	pat ...	—	leo(d)	nar ...	pain
Bob	—	—	—	—	boī ...	—	ke ...	—	řān ...	pain
Szeak-Bagili	nema	ab, yagar	tomo	kalam	—	—	a ...	livo(k), lino(d)	—	pain
Karkar	bani(n)	ab ...	tamol	kalam	bor ...	pat ...	at ...	luon	yō ...	pēn
Siar-Ragetta	lima(n)	ab ...	tamol	fule...	bos, bor	pat ...	—	—	nas ...	pain
Greget	lima(k)	ab, dāsm ¹	tāmōl	fūle...	bōs	pā, pāt	at, ad	liwo(k)	nās ...	pain, fain
Sarang	leman	ab, gugoi ¹	tamo	fūl ...	bōr ...	pāt ...	ābañ	levon	yao	pain
Manam	—	pera	moane	—	—	—	—	—	—	aine
Hansa V.	nelle, sabagu	pera	tamot	ale ...	bor ...	pato	amari	meme	dañ...	einde
Wokeo	—	rume	moān	kālevē	bōrō, mbōrō	—	wāřān	—	dān, nimē ...	venī
Keule	—	rum	—	—	bōr ...	—	—	—	—	—
Karesau	—	wenu	—	—	—	—	—	—	—	—
Ali ...	awik	ano	rama, yeni...	senar	bor ...	tamōl	as ...	nyeluk	ran ...	mōi
Seleo	—	rum	rama	mahar	por ...	—	ós ...	—	riēñ...	tamin
Yamir	—	rum	rama	mahar	pur ...	—	as ...	—	riēñ...	tamin
Yakamul	—	ano, āpār ¹	ramō, yenei	hanar	pūr, puer	tamel	āā, a	nyelek	riēñ...	tamin
Paup	—	āno, āpār ¹	—	mahar	puēr	—	as ...	—	riēñ ²	—
Ulau-Sueng	ayik	hanu	ramat	senar	būr	hat ...	adān	lehuk	dan	tahany
Tumleo	auwik	ano, laum ¹	lama	senar	por, pul	citatun	os, ōās	yaluk	riēñ...	tamin
Ser	—	—	—	bul ...	puōls	—	rañ ...	—	—	—
Sissano	awem	āno	woru	bul ...	pūl ...	at, sel	arau	eliak	rain...	tameñ
Yotafa	tibimi, paibi	duma	kār, tante, tan, tanta	sembi	por ...	āt ...	tap ...	nyoh, niyo...	nanu	mōi
Ingres	—	rumū	—	sembi	pōrē	—	tap ...	—	—	—
Yenbi	—	rumā	—	—	—	—	—	—	—	—
Entsau	—	—	—	—	pōrō	—	—	—	—	—
Tobadi	—	dum, parē, ¹ ruma	—	—	pōre	at' ...	taba	—	sayē	—

¹ Men's or club house.² Malol, rain.³ Malol, puōl, puēl.

7. PAPUAN VOCABULARY (1).

	1. Areca Nut.	2. Banana.	3. Bird.	4. Coco-nut.	5. Dog.	6. Ear.	7. Eye.	8. Fire.	9. Fish.	10. Foot, Leg.
Kai	like, saua ...	su ...	wipe ¹	homu	qato ²	hadze	ndzonge	dao ...	ñala	kike
Simbang	—	zukweu	wipe	komu	qoto	hase	tsonge	ntso	ñala, balum	gige
Saleng	—	zokueu	wipe	komu	qoto	hadse	nzonge	ngo...	ñala	giko
Yabim Kei	bota	su ...	būni	homu	guato	hāte	dzonge	mōso	bovi	doko
Poom	bedā	saloma	nango	hata, xonu	hoda, honta	hade	doite, done...	dyo, (n)da ...	si ...	dun, hi(n)ke
Bila	—	—	nāngō	hāta	hōda	—	—	jo ...	si ...	—
Sogeng	—	—	berūia	xōnū	chōnta	harenoñēñ	donñē	nda...	si ...	hikenonēñ
Busim	—	—	nango	xōnū, hōmū	dlo (?), hōntā	hade	dōne(n)	nda...	si ...	hinkō
Kamoka	—	—	nango	—	hōda	—	—	gērep	ōsom	—
Pong	gōsōñ	wesāp	nāni	kamū	wauwa	—	deñan	naēna	pōstīm	—
Keseraua	—	wesab	—	—	—	kenāma	dñana	—	—	wowatna
Ago	bōk...	vide	—	hōmū	—	hebe	dsōmō	da ...	si ...	—
Kelana Kei	dabali	wisep	mani	komo	kāsi...	—	—	gerep	sabon	kiese
Waso	kakam	—	—	—	—	—	—	—	—	—
Gorendu	kao...	moka	as ...	munki,	ča, dzañ	dab...	nange	bia ...	kaib, gumam	čamba
Bongu	—	—	—	tyelem	—	—	—	—	—	—
Bogajim	gali, surem	moga	ās ...	moñgi	sā ...	dāb...	ñam	bia ...	gaib	samba
—	daurem	muñge	xebari,	mañgi	baun	dab-gāla	nam-gala	namyuo	ye, ge	singa
—	—	—	gaihari	—	—	—	—	—	—	—
Burumana	—	—	—	—	—	damui	ñange	—	gomam	kwak
Manikam	kao	mongol,	as ...	mangi	čai	dabe	nangi	belu	—	kubak
—	—	mogol	—	—	—	—	—	—	—	—
Shongu	—	mongol	as ...	jelem	dsañ	dab...	niamyi	bala	umam	kakue
Wuon	—	mongol	—	mangi	sañ ...	damui	nange	beler	gumam	guwak
Kaliko	kau...	mul	ash ...	mangi	sañ ...	damui	nange	belachyu	gumam	kwag
Damun	bajom	mul	ash ...	mangi	sañ ...	—	nange	belao	gamam	kwag
Koliku	—	muñgol	—	mangi	sañ ...	damui	nange	—	gamam	kwak
Male	—	muñgol	—	gade	sañ ...	—	nange	—	—	kwak
Langtub	tukai	foi ...	yēu...	adu...	sañ ...	damui	ñange	—	—	kwak
Sungumana	—	muñgol	as ...	adu...	gaun	kūnula	ampatun	pai ...	sieb...	kabe
Maragam	—	muñgul	nigom	dylem	safi ...	damoi	ñange	bala	umam	kwe
Rumba	kau...	muñgul	qalele	adu...	ageñ	kiblañ	antem	pa ...	narum	kupe
Englam	kau...	muñgul	ianele	adu...	ageñ	gilbañ	abetem	mpa	nguarung	kupe
—	a ...	muñgul'	—	ta ...	ane	olan	namselim	he ...	tuome	ai

² Waria River, sino.¹ Waria River, ni.

Papuan Vocabulary (1)—*continued.*

	1. Areca Nut.	2. Banana.	3. Bird.	4. Coco-nut.	5. Dog.	6. Ear.	7. Eye.	8. Fire.	9. Fish.	10. Foot, Leg.
Kadda	—	mi ...	mabulo ...	—	anye	habena ...	hamuka ...	—	—	yabake
Wenke	—	ael ...	—	—	mama	ganguam ...	angigim ...	—	—	golom
Penim	ēb ...	it ...	mā ...	āstl...	bai ...	dahi ...	āmeig ...	—	—	laif
Mis...	fā ...	mug ...	ē ...	kiri...	be ...	dang ...	amēn, amel	—	—	—
Kemba	fā ...	muge ...	e ...	—	be, bai	—	amel ...	kēb	kakē	fail
								kēbē, kēvyal	kākē	fail
	11. Hand, Arm.	12. House.	13. Man.	14. Moon.	15. Pig.	16. Stone.	17. Sun.	18. Tooth.	19. Water.	20. Woman.
Kai	me ...	fi ...	nī' ...	masa, mosa	be, mbowē ²	qala, qola ...	horañ ...	mi ...	oba	naga, nōga
Simbang	me-noñe	bfi ...	nāka	māsa	mbe	qala	dzoañ ...	—	obo	nāka
Saleng	me-tāpe	bfi, bupu	namala	masa	mbe	—	zwañ ...	—	oboa	nī, nōka
Yabim Kei	me-noñe	fi ...	hanan, ni	mōsa	be ...	—	dzoan ...	me ...	opa	nōka
Poom	me, mole	fi, hafe	ni ...	tamane, weawe	qōē, be	—	wēna, wāgo	sōfi ...	nūsa	naga, niga
Bila	—	—	—	—	bē ...	—	—	—	—	nāka
Sogeng	men-onēñ	fi-duñ	nī ...	ñealē	gboē	—	oāgō	sofinē	misā	niga
Bussin	mēne, mēte	fi-kulū, māt-ūrūm	nī ...	tamā(ē)ne, mēsō-	gboē	—	ōñā, kai(u)ē	sāfi	misā	niga, nāga
				tama(ē)ne	bōre	—	—	—	—	—
Kamoka	—	—	—	rai ...	bera	—	karib	—	au ...	nyerab
Pong	—	—	nyewe	boita	—	kit ...	karp	—	—	nerap
Keseraua	metāna	uruma	nañ...	—	—	wese	—	nēsād	—	—

¹ Waria River, emo.² Waria River, bu; Morobe, pu.

Papuan Vocabulary (1)—*continued.*

	11. Hand, Arm.	12. House.	13. Man.	14. Moon.	15. Fig.	16. Stone.	17. Sun.	18. Tooth.	19. Water.	20. Woman.
Ago	...	—	—	tāmāna	mbe	pōsar	wēna	dsofi	mísá	—
Kelana Kei	mete-se	matse	mundugil	koivon	geia	wēsi	kaiwe	—	sango	kunduan
Waso	—	—	—	—	bo	—	—	—	—	—
Gorendu	ibon	gogumu, tobar	tamo, tuma	karam, elem	bul	tutañ, ubu, betau	oin, dzien	kagi	yí	keringa
Bongu	ibon	tal	tāmō	gagam	bul	gitañ, betau	siñ	gāgi	í	nañgli
Bogajim	bañ	kure, tal	tamo	bai	bel	menih	zeñ	ralage	ya	unpasari
Burumana	bar	tal	tuma	—	—	menih	—	—	yag	ngali
Manikam	bar	gure	toma	ka-yam	ból	menen,	kien, keñ	alagi	yak...	gali
Shongu	bar	urum	tshuma	elem	buol	peteu	dziñ	alagi	yak...	aili
Wuong	bar	telu	tuma	karam	bol	—	keñ	ralage	—	gali
Kaliko	bar	tal	tamo	kayram	bol	menen	kiañ	alagi	iag	nali
Danun	bar	ure	tamo	kuleem	bol	menen	—	alagi	iag	nali
Koliku	bar	tal	tuma	—	—	menen	—	—	yag	ngali
Male	bar	tal	tuma	—	—	menih	—	—	yag	ngali
Langtub	kula	wande	parān	tambun	mboi	nāñe	ke	bāgē	yañ	panō
Sungumana	bar	urum	tuma, tyuma	elem	bol	duma	señ	alagi	yag	añgli, agli
Maregam	mai	wande	tañgom	tambunam	bu	dumi	kei	—	kule	pinom
Rumba	uai	uande	tangom	dambun	mbo	dame	gei	maketem	kule	binom
Englam	dei	badi	tamo	saem	—	ater, damu	ulen	maiselim	í	genagulum
Kadda	yobo	kabike	nomu	āsiko	bōge	—	beme	—	—	bia
Wenke	gambin	koreb,	—	gulrum,	bu	—	romu	mara	—	nanti
		koruwam		gulerum						
Panim	ēbēn	ndsō, nso,	danā	yāgēl	fō	mēñin	am	aig	wā	ai
		badēm ¹								
Mis...	evel, even	lo, lāg ¹	dāñf, danas	kalam	fo	bār	kēm	en, el	lē	ās
Kemba	kevel	lo, dañem ¹	danab	kalam	fo, bo	—	kēmba	—	le	—

¹ Men's or club house.

PAPUAN VOCABULARY (2).

	1. Areca Nut.	2. Banana.	3. Bird.	4. Coco-nut.	5. Dog.	6. Ear.	7. Eye.	8. Fire.	9. Fish.	10. Foot, Leg.
Nupanob ...	bā, bā	—	ai ...	utu...	bai ...	daul, daun, etc.	amēl, amenik	ab ...	kakai, kayai	bail, bakale, akage
Bawaipa ...	bā ...	muge	ai ...	—	bai ...	—	amele	abe...	kakai	baile
Misdao ...	—	mug	āyē...	—	—	dēbun	amait	—	kakai	beid
Rempin ...	—	ug ...	ā ...	gureh	—	gerakesan	geme	—	kike	gesen
Bunu ...	hāb...	gi ...	mūkā	niu, nāta	kē ...	ityōāk	imūtāk	mūn	nālin	inēnō
Tombenam	nā ip	kuan	nakur	nde	aur ...	mak	tar	hāt...	tsir	tantakil
Monumbo...	—	—	—	iruañ	—	korani	damagatu	—	—	—
Alepapum...	—	—	—	—	—	—	—	—	—	—
Kopar ...	buruñ	—	—	—	—	—	—	—	—	—
Mangut ...	parin	—	—	—	—	—	—	—	—	—
Mabu ...	angetañ	—	—	—	—	—	—	—	—	—
Watam ...	—	—	gorak	ruañ	kiou	koar	namak	zak...	shing	or
K. Augusta	mēna	lab, labu	wābi	tōpan, tobma	uāra, aše	—	nou, mīni, mele, y'na	ūm, nyie, yinge	yara, bao, kami	dzoo
River	—	—	—	—	—	—	—	—	—	—
Kaip ...	—	—	—	—	—	—	—	—	—	—
Muschu ...	—	—	—	—	—	—	—	—	—	—
Dallmann H.	—	—	—	—	—	—	—	—	—	—
Dakur ...	—	—	—	—	—	—	—	—	—	—
Kavu ...	pupus	ipap	alumel	aumb	nambat	alinkas	nembās	asetā	eivul	ariu
Kumemim	pupus	—	—	—	—	āligas	—	—	—	—
Put ...	bubus	—	—	—	—	āligas	—	—	—	—
Vainan ...	potu	mikie	ñal ...	ñotu	pālen	mukñl	t'ekul	ni ...	vuem	kayal
Vrinagol	potu	—	—	—	peññ, beññ	—	—	—	—	—
Akur ...	—	—	—	—	pele	—	—	—	—	—
Tsinapali	—	—	—	—	—	—	—	—	—	—
Anal ...	—	—	nale	vōm	pele ¹	—	—	—	—	—
Arop ...	po, mosu	bur, vur	mein, mñn...	rieu, neu, ne	pelen, aun	—	—	—	nil ...	—
Varopu	mutu	apon	—	ne ...	lapa	teve	ine ...	aku	pi ...	—
Seko ...	—	—	—	—	—	—	—	—	va ...	karo

¹ Kopoam, pele.

Papuan Vocabulary (2)—*continued.*

—	11. Hand.	12. House.	13. Man.	14. Moon.	15. Pig.	16. Stone.	17. Sun.	18. Tooth.	19. Water.	20. Woman.
Nupanob ...	pel, epel, pēle	lāg, lage ...	dānāb	alam, kalam	bō ...	man	am ...	ail ...	lē ...	as, aye
Bawaipa ...	—	—	dānāb	—	bo ...	—	—	—	le ...	—
Misdao ...	epele	—	dal ...	kalam	boi ...	—	ām ...	—	le ...	ase ...
Rempin ...	habed	—	māt...	—	—	—	an ...	—	nē, yē	—
Bunu ...	geben	—	māandē	ful ...	—	—	sē ...	—	yu ...	an
Tombenam	ēāmbō, kambe	dān	—	tau ...	bōr	mai	ōtīm	nānāk	aak, dyu ...	nānānā
Monumbo...	iaidambi ...	tsiner, ngoko	mer...	yū ...	mbur	ikupul	tsaut	ēr ...	tsu...	kawateek
Alepapum...	kagarani, dafolwani	—	—	—	—	—	—	—	—	—
Kopar ...	—	—	—	—	—	pat'	—	—	—	—
Mangut ...	—	—	—	—	—	—	—	—	—	—
Mabu ...	—	—	—	—	—	—	—	—	—	—
Watam ...	par-kekat	endo	namot	—	markum	—	—	—	arum	woin
K. Augusta River	ānier	wi, ya	—	ūmo, móbo, o	mbal, hu ...	—	yaban, nyie, wan	deu, wok, big, nimbī	yo, gu, ob ...	—
Kaip ...	—	—	—	vol, val	—	pa ...	nia, nya	—	—	—
Muschu ...	—	—	—	—	bōlō	pa ...	na ...	—	—	—
Dallmann H.	—	—	—	—	bōlō, pōlō	pa ...	nia, nya	—	—	—
Dakur ...	—	—	—	—	bur, buēr	—	—	—	—	—
Kavu ...	vip ...	ulipat	aleman	aun...	būl ...	utam	aun...	nalō	ambal	ilmatok, vilmatok
Kunemim	—	—	—	sōnār	bul ...	—	—	—	—	—
Put ...	—	—	—	sēnār	buel	—	—	—	—	—
Valman ...	—	—	—	sanar	vūl ...	tomul	nanu	eiagol	vul ...	niki
Vrinagol	—	nagol	kaminagol	sānār	buēl, vuēl	—	—	—	—	—
Akur ...	—	nagol, pel ...	—	—	buēl, vuēl	—	—	—	—	—
Tsinapali	—	—	—	—	buēl, vuēl	—	—	—	—	—
Anal ...	—	nakol	teimpe	alno	merol	—	yaume	—	tipe...	nimo reipi
Arop ...	—	alon	ani ...	vu, bu	puō, puōl	at ...	aurau, arau	—	rān, rain	tamin amōn
Varopu ...	aüte	—	tauwen, arvi	ura...	rau ²	—	umo	—	pij ...	vumbei
Seko ...	—	—	—	—	pale, bare ...	—	—	—	—	—

¹ Kopoam, merau.² Leitere, ba; Wanimo, da; Yako, da; Wutung, da.

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A STONE-AXE FACTORY AT GRAIG-LWYD, PENMAENMAWR.

By S. HAZZLEDINE WARREN, F.G.S.

I. THE DISCOVERY OF THE SITE.

WHEN on a holiday in North Wales during the past summer (1919), I had the good fortune to discover an important prehistoric site, where the manufacture of stone axes of Neolithic types was extensively carried on. It appears to be very similar in some respects, though not in all, to those near Cushendall, described in our *Journal* of 1903 by Mr. J. W. Knowles.

As I was passing through the small elevated valley just above the Green Gorge at Penmaenmawr, I noticed an abundance of "felsitic"¹ flakes, a few scrapers, and one broken butt-end of a partially polished axe. I traced this site a short distance along two of the branches of this small valley, but failed to find evidence of its further extension in any direction.

A few days later I found a small chipped axe, with numerous flakes in the same "felsitic" material, not far from the Dinas behind Llanfairfechan. Nearer Graig-lwyd, and to the west of Carneddau (also on the top of the moors), nearly every mole-hill was seen to have several small flakes upon it, and when one dug through the turf evidence of a true chipping-floor was at once apparent.

My wife, who has been of invaluable help during the whole of the search, next found a damaged axe on a cart-road at Graig-lwyd farm, and we also found a great number of flakes a little above the farm buildings. But it was not until I happened to strike a new path which had been cut in the mountain-side, just above Graig-lwyd farm, for the use of German prisoners-of-war working in the quarries, that I obtained an insight into the real nature and importance of the site.

After spending some little time in Snowdonia searching almost every piece of broken ground I came across without finding a single trace of human workmanship, I returned a second time to Penmaenmawr to extend my hunting on that site before returning home.

II. THE GEOLOGY OF THE SITE.

Penmaenmawr Mountain and Graig-lwyd are together formed of an oval intrusion of igneous rock which measures roughly about one and a half miles by one mile. This is extensively quarried for road metal, and as a building stone, and is known in commerce as the Penmaenmawr granite. Some petrologists group this rock with the diabases, but there are differences of opinion upon its correct

¹ *Vide* Sections II and VIII of this paper.

nomenclature, and others consider it a felspathic porphyrite, a term more descriptive of the general appearance of the Graig-lwyd rock.¹

The main mass of this intrusion is thoroughly crystalline in structure, and I have found no evidence of its use for the manufacture of prehistoric stone axes.

Toward the eastern margin of the intrusion the rock assumes a close, fine-grained texture, and it flakes remarkably well, with good bulbs of percussion and fairly smooth conchoidal fractures. It is, of course, inferior to flint in this respect, and is also tougher and requires more forceful blows. Further observations on the character of the Graig-lwyd rock will be given later (Section VIII).

This fine-grained rock formed Graig-lwyd (which has now been largely cut away by the quarrying operations), while from Graig-lwyd it continues in a line of minor crags, which sweep southward and then westward to Clip-yr-Orsedd on the top of the moors. Round the rest of the intrusion the fine-grained margin forms only a very narrow band.

It was the scree material which fell down the mountain slopes from this line of crags which was so extensively worked by prehistoric man for the manufacture of his stone axes.

III. THE STONE AXES OF NORTH WALES.

Neolithic remains are generally scarce in North Wales, and, so far as I am aware, no important site attributable to that period has hitherto been recorded from the mountain district. Apart from perforated stone axe-hammers, which for the most part at least date from the Bronze Age, five stone axes (including one in flint) are described by Evans from North Wales, together with a somewhat vague reference to "some" others not individually specified. It is of particular interest to note that this author, in referring to chipped axes of material other than flint, writes as follows (*Ancient Stone Implements*, 1897, p. 84):—

"A very fine specimen from Anglesea, formed of felstone, is preserved in the Museum of Economic Geology, in Jermyn Street. I have a fragment of one in greenstone, found by Mr. R. D. Darbshire, F.G.S., at Dwygyfylchi, in Carnarvonshire, and another of felstone, extremely rude, found by him on Pen-maen-mawr."

In reference to these passages, one may observe that Dwygyfylchi is the adjoining village to Penmaenmawr. At the Jermyn Street Museum the Anglesey axe is labelled as being probably made of the Penmaenmawr rock; and for myself I should feel little hesitation in deleting the word "probably."

Two interesting inferences follow from the above. In the first place, the credit of finding the first example of these remarkable Graig-lwyd "wasters" belongs to the late Mr. R. D. Darbshire; and in the second place, three out of the five stone axes definitely described by Evans from the whole of North Wales are associated directly or indirectly with our present site.

¹ *Vide* H. C. Sargent, "The Penmaenmawr Intrusions," *Geological Magazine*, 1915, p. 15.

The record of stone axes from North Wales has been considerably increased of recent years; some of these axes were probably made at the Graig-lwyd factory. Among these more recent records one may mention in particular a chipped axe in "felstone" found near Foel Lwyd, and preserved in the Chester Museum. Mr. W. Bezant Lowe gives a photograph of this specimen in *The Heart of Northern Wales* (page 41). In the same work this author also refers to discoveries of stone implements at the hill-fortress of the Dinas behind Llanfairfechan. These include two stone axes (page 41), and several flakes found inside the hut-circles of the fortress (page 97).

The apparent association of the flakes with the hut-circles may be accidental, as flakes occur scattered in the soil over this whole country, and may become mingled with any later remains.

The author makes the following prophetic remark with reference to these flakes of local stone:—"To judge from the state of the work, it looks as though they might have come from a prehistoric workshop."

Thus, on gathering together the records of stone axes from the neighbourhood of Penmaenmawr, coupled with this observation of Mr. Bezant Lowe, it seems remarkable that it was left to a stranger upon a casual visit to discover the predicted workshop within little more than a mile of the Dinas, where the flakes occur by the cartload!

IV. THE AREA OF THE WORKING SITES.

Rich chipping-floors, which lie immediately beneath the turf, appear to cover the greater part of the north-eastern slopes of Graig-lwyd. The eastern slopes are covered by dense vegetation, and there was a general absence of mole-hills or other disturbance, so that there was little opportunity for search, but farther up on the top of the moors to the west of Carneddau, there is again abundant evidence, as already mentioned. Thus the stone-axe workings extend for a mile, or perhaps more, round the shoulder of the mountain, with a width of about one-sixth of a mile. They may not be continuous over this area, but they may also extend farther; one does not yet know enough of their detailed distribution to give any useful estimate of the net acreage which the chipping-floors cover.

I dug several trial holes, but in each instance the chipping-floors proved to be strictly superficial.

The richness of the site may be gathered from the fact that, with the very limited opportunities for search afforded by the nature of the country, I found between fifty and sixty stone axes within eight days, without counting the much more numerous rude "wasters" in a more unfinished state. Another record that I took was as follows:—One man digging on the chipping-floors for five and a half hours turned up four perfect and five broken axes in advanced stages of workmanship, ten "blocked out" examples arrested in various preliminary stages, together with flakes

by the barrow-load, and one piece which might have been intended for a rough scraper.

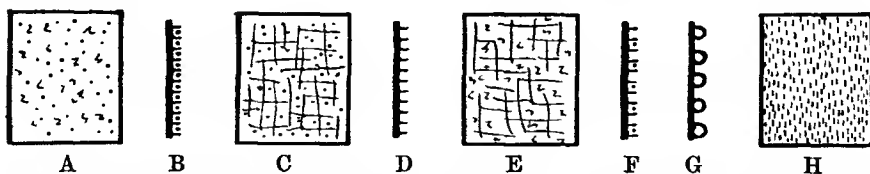
Of outlying sites, the most important at present known, although this is comparatively quite small, is the one first found at the top of the Green Gorge. But the fact of a partially polished axe having been found here suggests possible points of interest. It is an attractively sheltered spot, little more than a mile from the axe-factory, and is clearly a dwelling-site of the date of the axe-workers.

I noted a good many scattered flakes (of the same "felsitic" material) between the Graig-lwyd sites and the Dinas, a few still further afield on Carreg Fawr, and a good many about one-eighth of a mile to the north of Maeni Hirion, along the track which would naturally lead from the axe-factory to the Green Gorge.

There are large areas at present unsearched, and in this type of country opportunities for discovery do not always present themselves, and sites may easily be missed. There are other neighbouring intrusions of igneous rock similar to that of Penmaenmawr, and it would not be surprising if further axe-working sites were discovered upon their flanks.

V. THE AXE-MAKING INDUSTRY.

The conditions of work were governed by the fact that it was scree material—that is to say, angular blocks of rock broken up by frost along its natural joint-planes—which was employed. The method of attack which was adopted to reduce a block of scree to the form of an axe depended upon its original size and shape. I do not think that any archaeological significance attaches to the many abnormalities and peculiarities of form which are to be observed among the pieces discarded in an unfinished state.



INDEX TO DIAGRAMMATIC REPRESENTATION OF SPECIAL CHARACTERS OF THE IMPLEMENTS.

The concentric rippings on the flaked surfaces of this stone are more obscure than in flint work, while the radial ribbings, though not always noticeable, tend on the average to be far stronger. Unshaded facets in the diagrams are either modern accidental chips or cases in which the surface features are so obscure that one could not see from which direction the blow had been delivered. A, and (in the cross-sections) B, represent old joint-plane surfaces, weathered before flaking. C, and (in the cross-sections) D, natural joint-plane surfaces separated during the flaking. E, and (in the cross-sections) F, natural joint-plane surfaces where the comparative date with reference to the flaking is uncertain. G, inner face of flakes in the cross-sections. H, coarse preliminary grinding in 51 and 52, polishing in 65. In all the drawings, *a* is the face view, *b* the side-edge view, *c* the cross-section—these letters are placed so as to correspond with the same point on the specimen in the different views, in order to enable the position to be identified.

A.—Preliminary and Intermediate Stages in Flaking an Axe.

1. Large round-pointed example from the Carneddau cairn; $330 \times 300 \times 170$ mm.; weight, $36\frac{1}{2}$ pounds. 2. Another specimen, abandoned on account of excessive thickness; $355 \times 200 \times 160$ mm.; weight, 26 pounds (*Museum of Practical Geology*). 3. Acutely-pointed pyramidal piece, a form of frequent occurrence; the point was the first thing aimed at, and this was of course intended as the butt-end of the finished axe; $300 \times 213 \times 125$ mm.; weight, $16\frac{1}{4}$ pounds. 4. Long, narrow example, thicker than broad, and further unsatisfactory on account of its double curvature; $394 \times 125 \times 134$ mm.; weight, $12\frac{1}{2}$ pounds. 5. A very rude "waster," roughly ovate in form; $222 \times 130 \times 72$ mm. 6. Another, similar; $206 \times 158 \times 74$ mm. 7. Roughed-out axe, flaked on both faces along the side edges, but abandoned before the future cutting-edge had been touched;

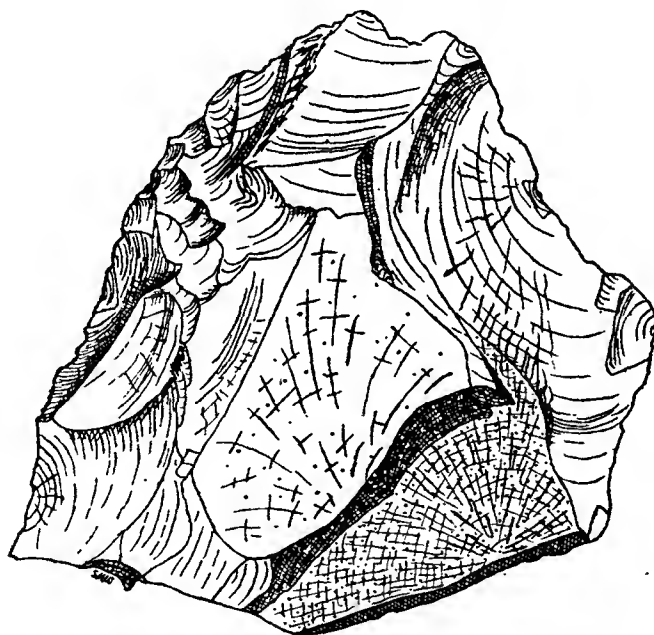
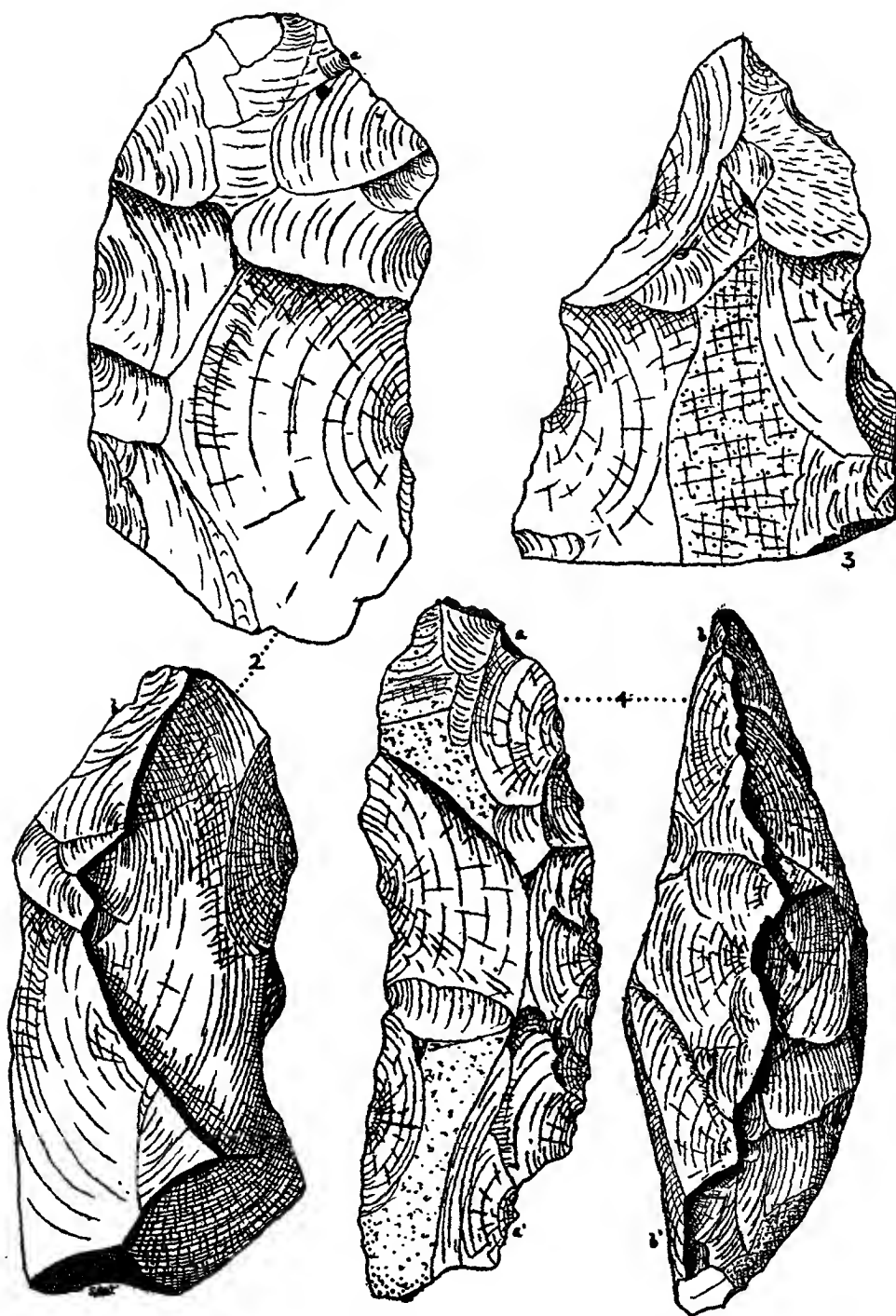


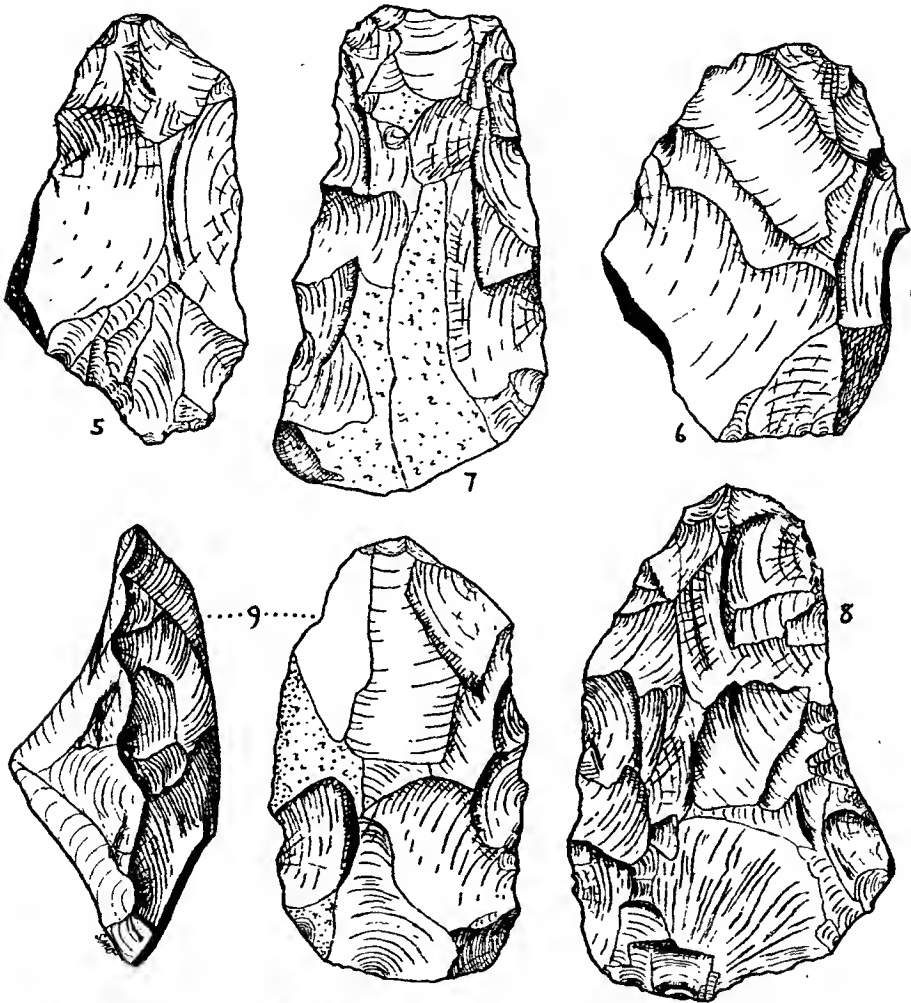
FIG. 1.—SCREE IN FIRST STAGE OF FLAKING. SCALE $\frac{1}{4}$.

$254 \times 143 \times 64$ mm.; weight, 5 pounds. 8. Unsymmetrical "waster" slightly more advanced in chipping; $264 \times 166 \times 88$ mm. 9. This has much more nearly the ultimate form of the axe, but it is of excessive thickness, and illustrates a bad case of "hump" on one of its faces; $228 \times 132 \times 110$ mm.; weight, $6\frac{1}{2}$ pounds. 10. Rather thin ovate, apparently made from a flake, with piece broken out of one side; $247 \times 134+ \times 47$ mm. 11. Pointed butt-end in preliminary stage of flaking; $179+ \times 133+ \times 52+$ mm. 12. Pointed butt-end with oblique hinge-fracture; $152+ \times 161+ \times 84+$ mm. Pieces of the character of 11 and 12, in every stage of flaking, are very common.



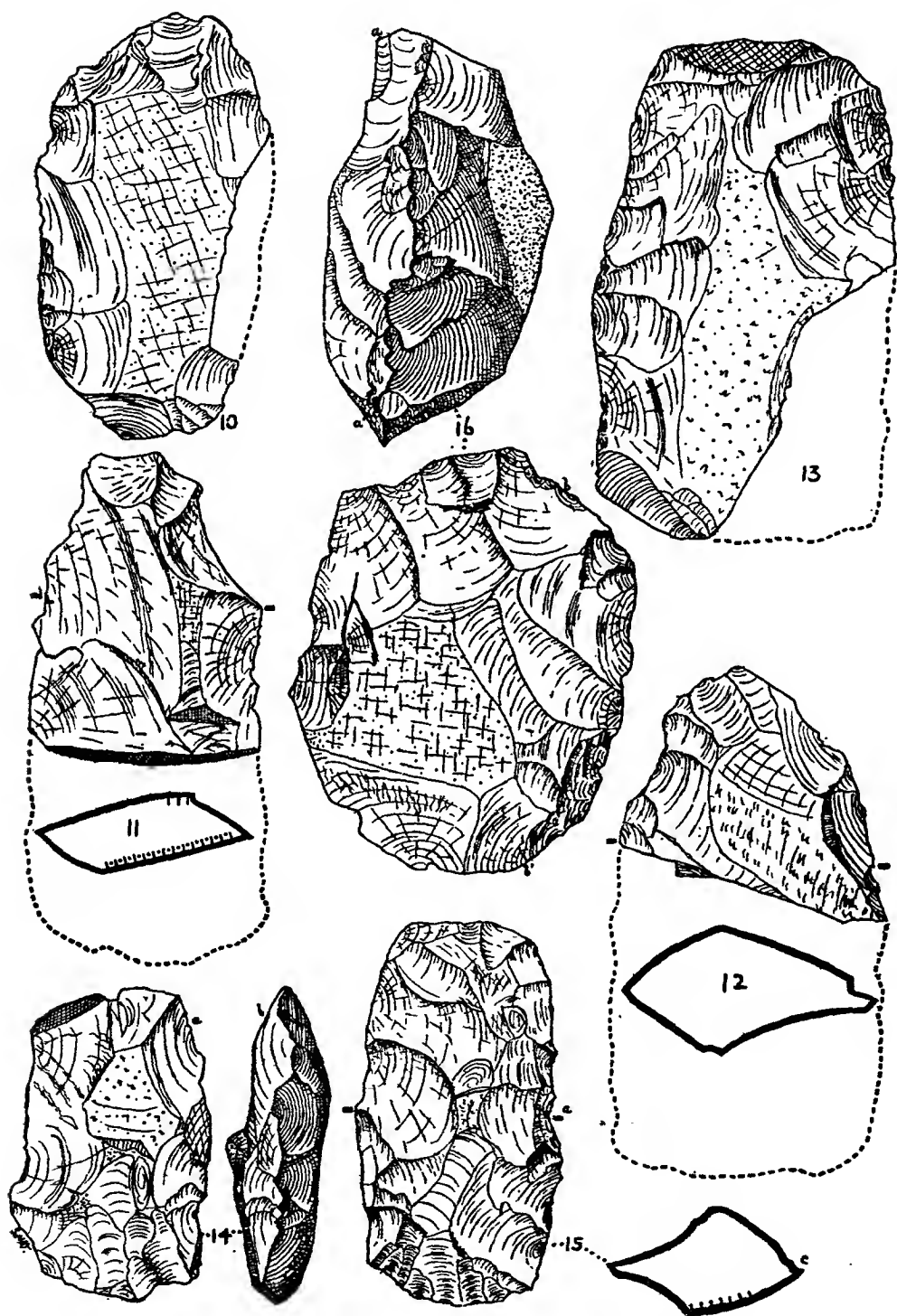
FIGS. 2-4.—PRELIMINARY STAGES IN FLAKING AXES FROM SCREE. SCALE $\frac{1}{4}$.

13. Rectangular form, made from tabular scree, in preliminary stage; $291 \times 170+ \times 78$ mm.; weight, $9\frac{3}{4}$ pounds (*British Museum*). 14. Smaller rectangular form, flaking not very advanced; $183 \times 115 \times 55$ mm. 15. Rectangular form in intermediate stage of flaking; $223 \times 125 \times 65$ mm. Probably 13 to 15 should be grouped with the more definite double-axes 56 to 64.



FIGS. 5-9.—AXES IN INTERMEDIATE STAGES OF MANUFACTURE. SCALE $\frac{1}{4}$.

16. This was the first of the larger specimens that I found, and I then mistook it for a tortoise-core, which it greatly resembles in shape. But a comparison of a larger number of examples of these broader specimens showed that they were equally chipped all round the periphery, instead of being prepared by lateral flaking down the side edges for the striking of long flakes from a striking platform. I came to the conclusion that its remarkable resemblance to a tortoise-core was accidental, and that it was merely a failure in the attempt to make an axe; $245 \times 210 \times 106$ mm.



FIGS. 10-16.—VARIOUS INTERMEDIATE FORMS. SCALE $\frac{1}{4}$.

B.—The Flaking of Tabular Scree.

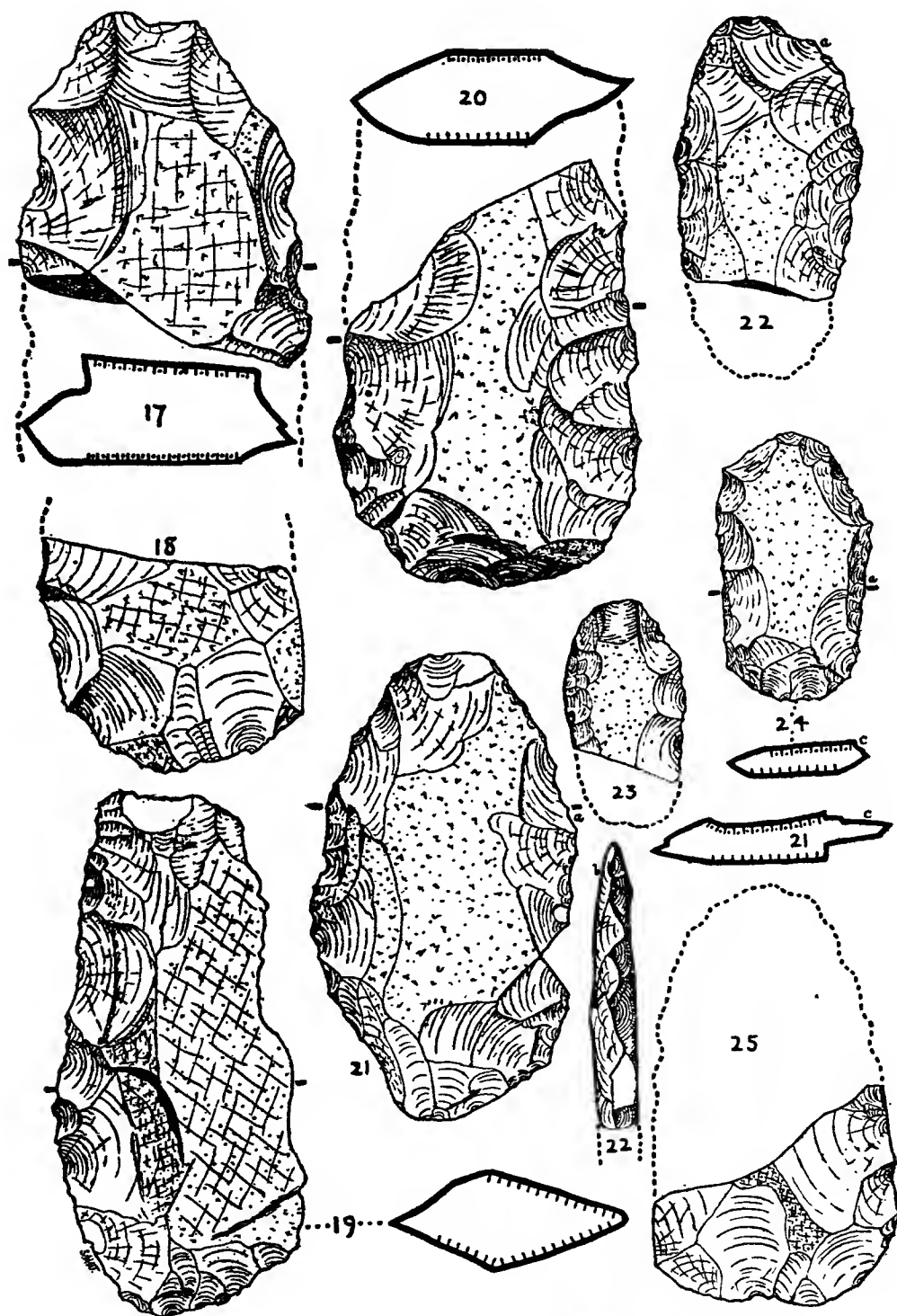
The next group illustrates the special characters presented by work on tabular blocks of scree, both thicker and thinner, of which one or two examples (such as 13) have already been illustrated. They are all flaked on both faces, but not to the centre, which still retains the original joint-plane surface; were the specimens completely flaked over their surfaces the tabular form of the raw material could no longer be identified. 17. Example in first preliminary stage broken by an irregular hinge-fracture; $216+ \times 166 \times 59$ mm. 18. Cutting end in preliminary stage, broken with a straight fracture, producing the unhappily named "tea-cosy"; $164+ \times 155 \times 59$ mm. 19. Not a true tabular form; worked only along one side edge, with the other naturally sharp; $306 \times 146 \times 58$ mm. 20. Broken by oblique fracture; $249 \times 176 \times 60$ mm.; weight, $7\frac{1}{4}$ pounds. 21. Large thin ovate of pseudo-Acheulian form; $273 \times 158 \times 36$ mm. 22. Broken thin ovate; $164+ \times 106 \times 25$ mm. 23. Small ovate with oblique fracture; $109 \times 69 \times 16$ mm. (*British Museum*). 24. Thin example intermediate between the ovate and the rectangular; $157 \times 91 \times 21$ mm. 25. Cutting edge of large ovate, broken by oblique incurved fracture; $131+ \times 144 \times 21$ mm.

C.—Unfinished Axes.

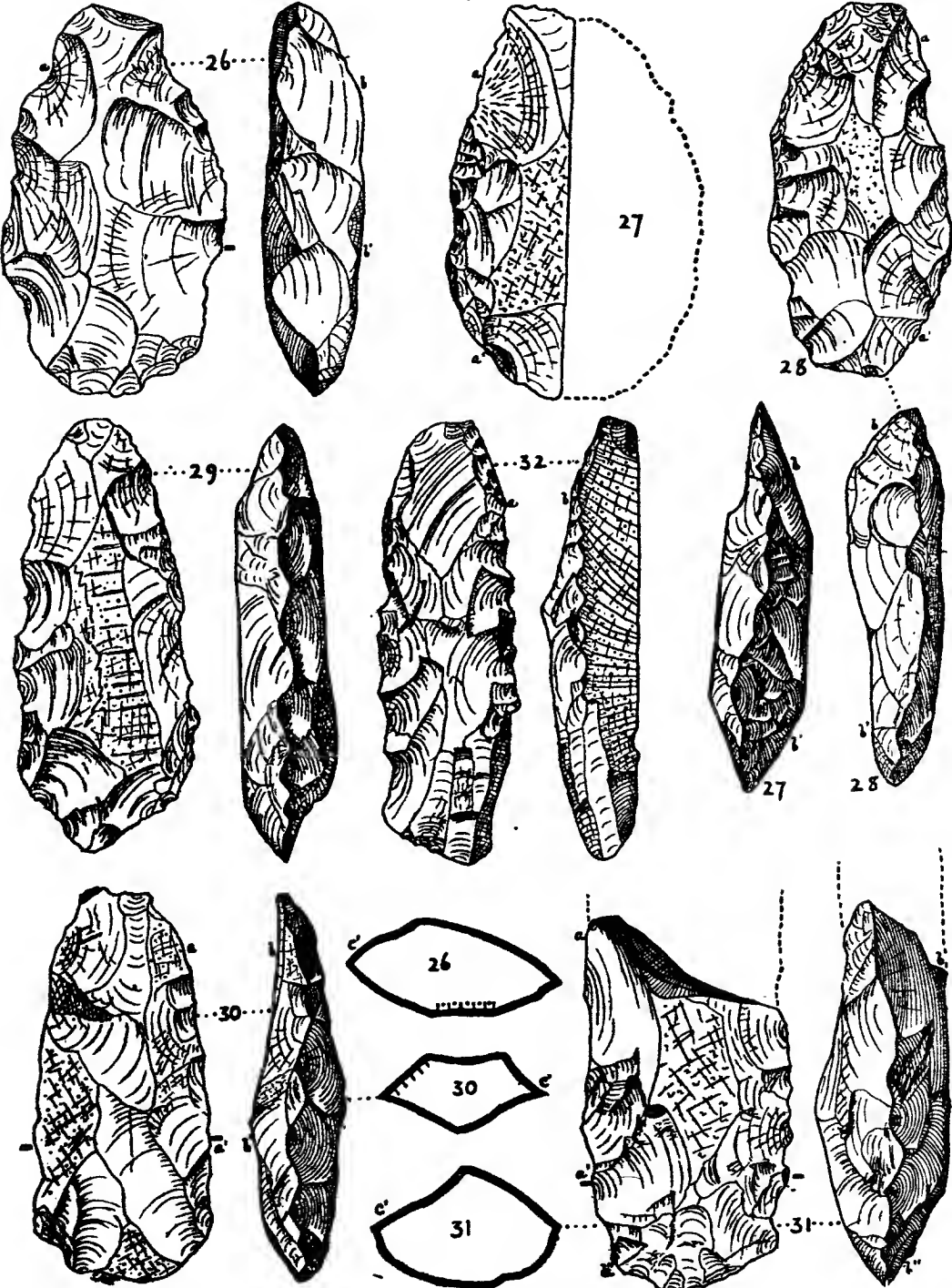
It is noteworthy that many of the specimens in this stage greatly resemble Chellian implements. 26. Particularly rude in flaking for its size and form; $224 \times 127 \times 58$ mm. 27. Made from tabular scree, split down the middle along a joint-plane by an old fracture probably made during the flaking; $223 \times 70+ \times 53$ mm. 28. Resembles some of the double-pointed Chellian forms; $211 \times 105 \times 53$ mm. 29. In its unfinished state the intended cutting edge is more pointed than the butt; $247 \times 104 \times 56$ mm. (*British Museum*). 30. Unfinished axe of more normal form; $225 \times 104 \times 57$ mm. 31. Axe in intermediate stage with butt-end broken off; too thick to form a satisfactory blade; $220+ \times 118 \times 74$ mm. 32. This is really in the preliminary stage, but flaked on one face only from a small scree; $251 \times 83 \times 60$ mm. 33. Butt-end of large axe, with hinge-fracture, making a small "tea-cosy"; $110+ \times 102+ \times 51+ \text{ mm.}$ 34. Butt-end of large axe, with oblique and slightly incurved fracture; $110+ \times 90+ \times 29+ \text{ mm.}$

D.—Advanced Stages in Flaking an Axe.

35. Pointed-butt axe, much corroded by weathering; $148 \times 75 \times 45$ mm.
36. Pointed-butt axe of broader proportions; $184 \times 108 \times 58$ mm. 37. Narrow
axe with broader and thinner butt, and a very uncomfortable hump on one face,
which repeated attempts have failed to remove; $188 \times 73 \times 46$ mm. (*British
Museum*). 38. Axe of elongated form; $169 \times 67 \times 34$ mm. 39. Slightly adze-
shaped, made from tabular scree; $300 \times 92 \times 39$ mm. 40. Broad, thin butt,



FIGS. 17-25.—TABULAR AND OVATE FORMS. SCALE $\frac{1}{4}$.



FIGS. 26-32.—UNFINISHED AXES. SCALE $\frac{1}{4}$.

with poorly developed hinge-fracture: these examples with broader and thinner butts (in their unfinished state) retain the sharp side edges and lozenge cross-section of the "pointed-butt" group; they show no indication of the squared side edges and flat faces of the true "thin-butt" group; $127+ \times 73 \times 44$ mm. (*British Museum*). 41. Cutting end, broken with a better developed hinge-fracture; $132+ \times 84 \times 40$ mm. (*British Museum*). 42. Butt-end with jagged fracture made in the attempt to remove the hump on one face; $157+ \times 77 \times 45$ mm. 43. Cutting end of axe with butt broken away by oblique fracture.

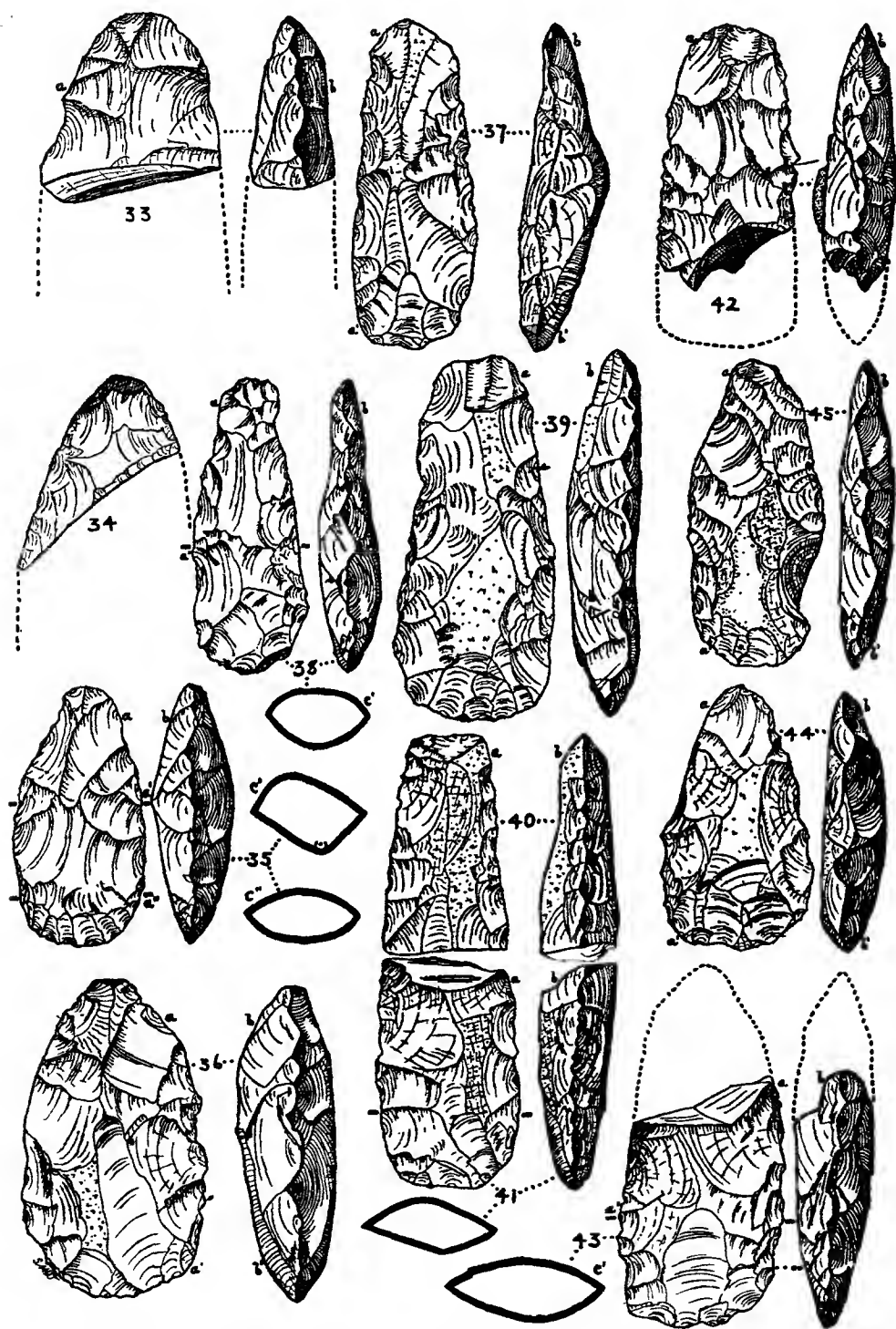
44. This specimen would exactly resemble a sub-triangular pointed Chelles implement but for the fact that the functional ends are reversed; $150 \times 85 \times 33$ mm. 45. Rather thin axe of elongated oval form, which also might easily be matched with palæoliths; a piece broke out of one side during flaking; $175 \times 76 \times 29$ mm.

E.—The Adze and Chisel Group.

It need hardly be explained that the balance of the blade to the work is differently adjusted in the axe and in the adze. From the point of view of tools and the work that they do, the distinction between the axe and the adze is very important. It must be admitted, however, that the balance of the stone blade is not always reliable. Among the implements of modern savages one occasionally sees an axe-blade mounted as an adze, but I do not remember to have seen an adze blade mounted as an axe because, in actual use, it would twist and jump and be much more unsatisfactory than the opposite makeshift. When the haft has disappeared one must judge the probability of the mounting from the balance of the blade, and admit an element of uncertainty in make-shift usage.

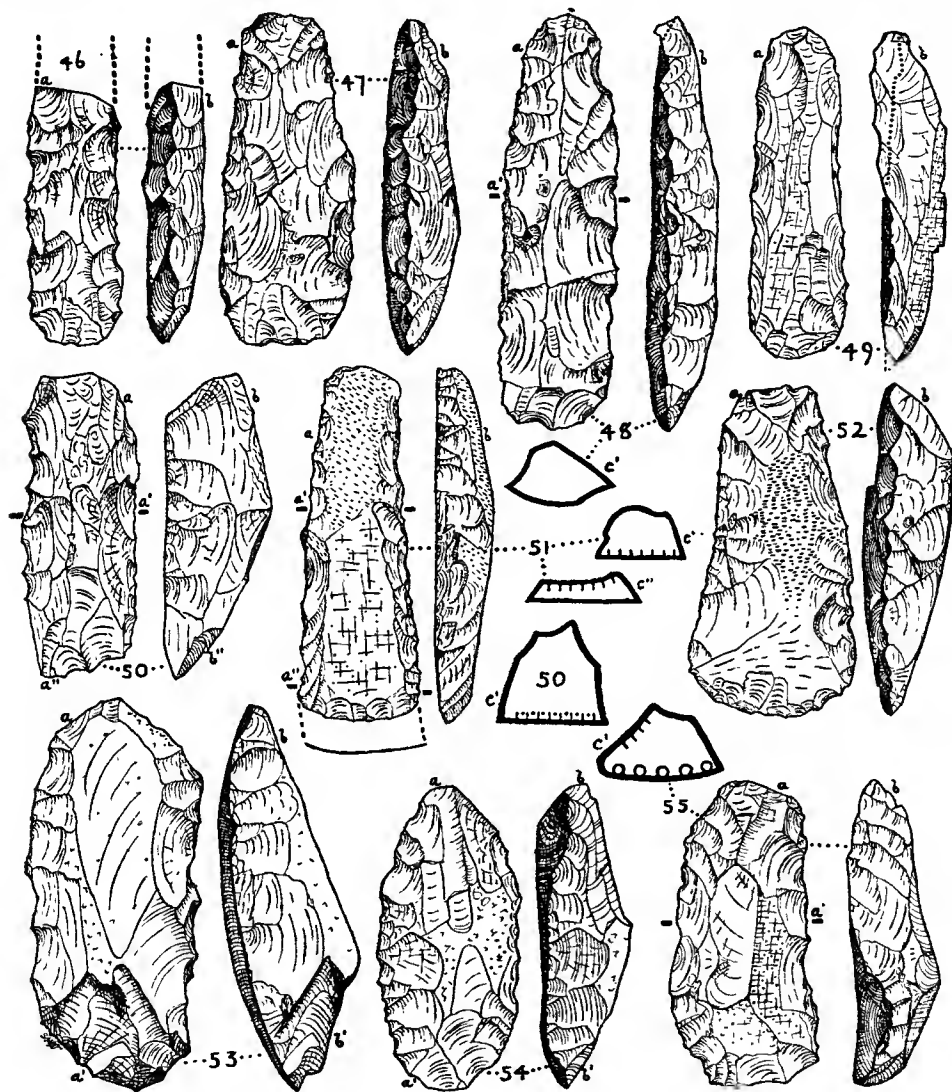
The blade in the adze is set at right-angles to the haft, and its primary purpose is the surface dressing of woodwork. It is essentially a peaceful tool used in the construction of houses, boats, furniture, and the like. In modern carpentry its work is largely superseded by the plane, except where mediæval effects are being deliberately imitated; just as the axe for direct cutting-through has been to a great extent superseded by the saw.

46. Narrow chisel-like implement, with butt broken away, and very slight and uncertain suggestion of the adze balance; $133+ \times 49 \times 28$ mm. 47. This has a more distinct adze form, with the butt broad and thin; $173 \times 70 \times 38$ mm. 48. Elongated adze or chisel; the opposite side edge to that shown in the side view is very remarkably sinuous, or zig-zag, like a Chelles implement; $214 \times 61 \times 34$ mm. 49. Flat-faced chisel, or small narrow adze, with both faces equally flaked; $171 \times 50 \times 32$ mm. 50. Adze, somewhat rude, with untrimmed flat face and oblique edge; $162 \times 59 \times 54$ mm. 51. Adze, with flat face untrimmed (except at the cutting edge), and slightly expanded and gouge-shaped edge; $184 \times 63 \times 29$ mm. 52. Adze with expanded edge; not so flat-faced



FIGS. 33-45.—STONE AXES IN ADVANCED STAGES OF FLAKING. SCALE $\frac{1}{2}$.

as most of the others; $172 \times 86 \times 44$ mm. 53. Rude adze, made from a flake, with very strong adze-curve seen in the side view; $204 \times 86 \times 66$ mm. 54. Smaller and neater adze, made from a flake; $159 \times 73 \times 48$ mm. (*British Museum*). 55. Another somewhat rude adze made from a flake; $160 \times 76 \times 43$ mm.



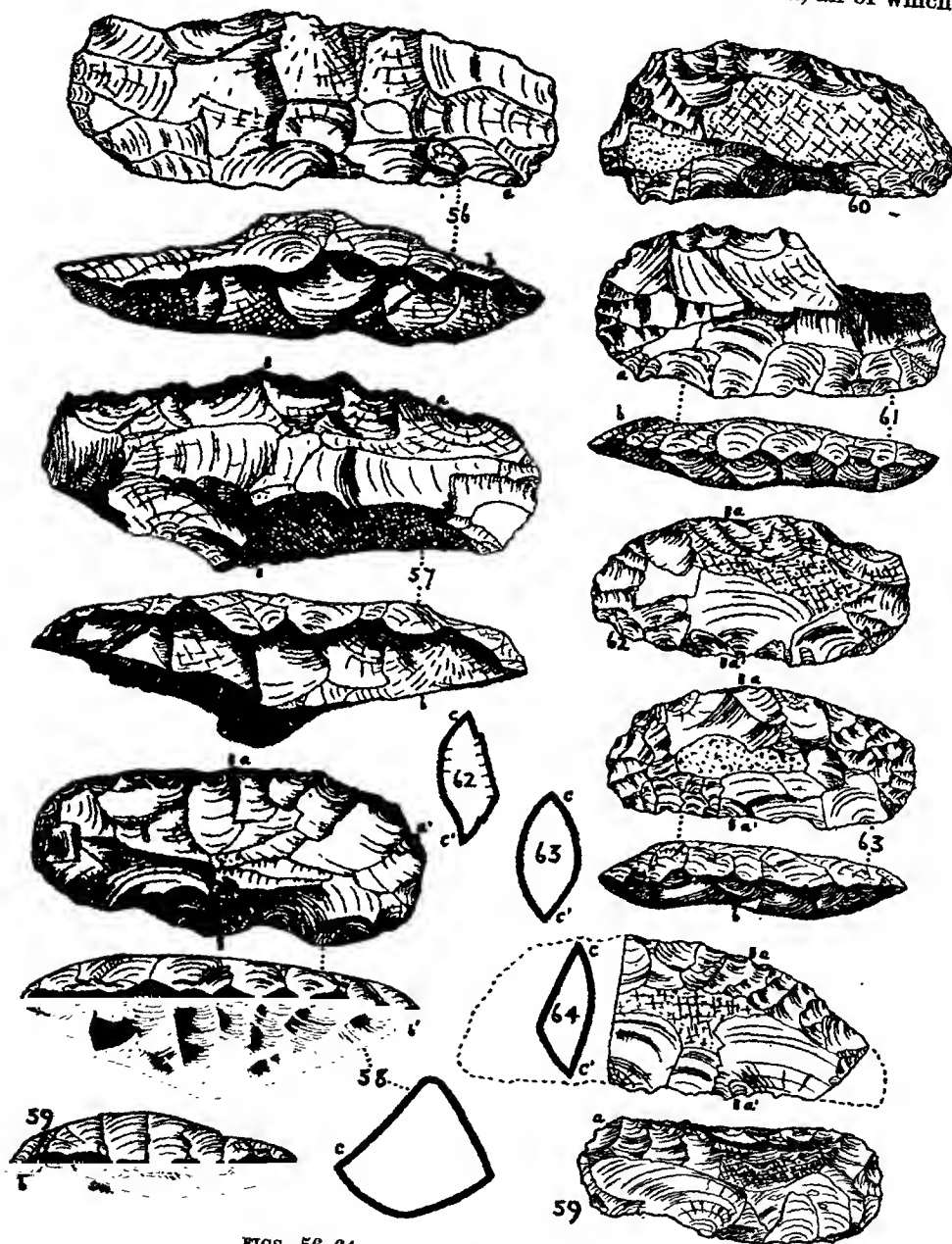
FIGS. 46-55.—ADZE AND CHISEL GROUP. SCALE $\frac{1}{4}$.

The adze form is supplemented by slight trimming, or counter-basil, on the back or flat face at the cutting edge (in addition to the main basil on the front or round face) in many of the above, especially in 49, 50, 51, 53, 54 and 55.

F.—The Double-Axe Group.

Double-axes, with an equal cutting edge at either end, are abundant on the site. The specimens 13, 14 and 15, already illustrated, should be compared with this group.

56. A good example in an intermediate stage of flaking; $267 \times 96 \times 68$ mm. (*British Museum*). 57. Another similar, showing unsuccessful attempts to remove longitudinal thinning flakes (see 71 and 72) from either end, all of which ran



FIGS. 56-64.—DOUBLE AXES. SCALE $\frac{1}{4}$.

out too soon, and failed to carry away the hump in the middle; $272 \times 108 \times 81$ mm. 58. Similar in form to 56 and 57, but more advanced in flaking, also spoilt by a hump in the middle; $216 \times 90 \times 76$ mm. 59. This is of irregular form

in both views, and shows much battering of the edges in the unsuccessful attempt to shape it better; $159 \times 59 \times 45$ mm.

The implements of the next sub-group are broader and thinner in their proportions, and have one side edge nearly straight and the other considerably curved. 60. Made from a flake, somewhat unformed but apparently intended for one of this group; $185 \times 82 \times 32$ mm. 61. This is quite a good example, except for the accidental breakage during flaking; in an intermediate stage; $182 \times 89 \times 36$ mm. 62. Another similar example; $166 \times 79 \times 37$ mm. 63. A still better flaked specimen of the same type; $162 \times 71 \times 36$ mm. 64. A broken piece of a longer example; $135+ \times 82 \times 31$ mm.

The approximate uniformity of thickness in the above five examples of the same type is noteworthy.

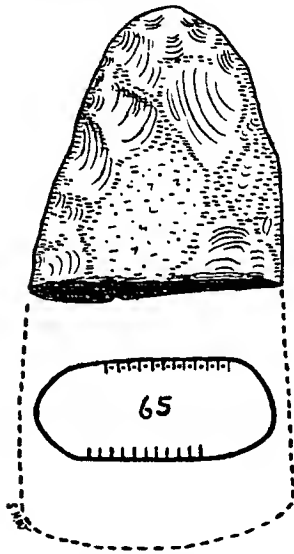


FIG. 65.
PARTLY POLISHED STONE AXE. SCALE $\frac{1}{2}$.

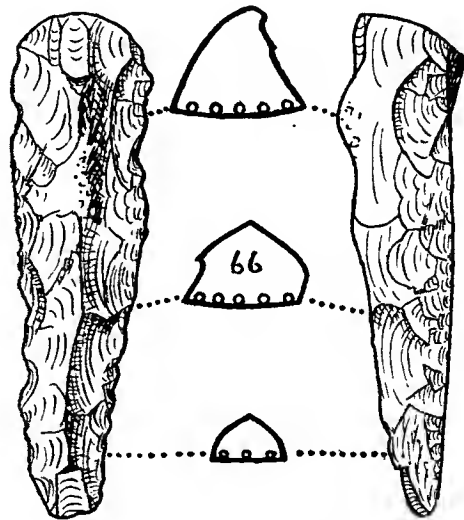


FIG. 66.
PRISMATIC FORM OR BROKEN CHISEL. SCALE $\frac{1}{2}$.

G.—Polished Axe.

65. Butt-end of axe, broken by hinge-fracture, with slight polishing chiefly along the side edges. It was made from tabular scree, and the flaking remains quite rude. Found to the north-east of Craig-Hafodwen, more than a mile from the axe factory, but made of the Graig-lwyd rock; $77+ \times 65+ \times 27.5$ mm.

H.—Exceptional Types.

66. Prismatic form of triangular section, made from a flake; $131 \times 35 \times 30$ mm. Mr. F. N. Haward has pointed out to me that this is probably a narrow flat-faced adze, or chisel, with the cutting edge broken away from the broader end.

67. Side chopper, the back formed of much weathered "crust"; $83 \times 126 \times 56$ mm. There is one other, similar, and both were found to the south-east of the

Carneddau cairn, on the margin of the working sites. This is quite a flint type of the chalk downs of the South of England, and can occasionally be matched from the Palæolithic river gravels.

68. This is another flint type of the chalk downs, apparently a rude double-ended pick of triangular section, or perhaps merely a failure in the attempt to make an adze; $163 \times 44 \times 37$ mm.

I.—Thinning Flakes.

It will have been noted from the foregoing descriptions that a considerable number of the unfinished axes were discarded on account of excessive thickness of the blade. Experience of experimental implement making shows that this is the greatest difficulty which has to be overcome. In order to make a blade which will

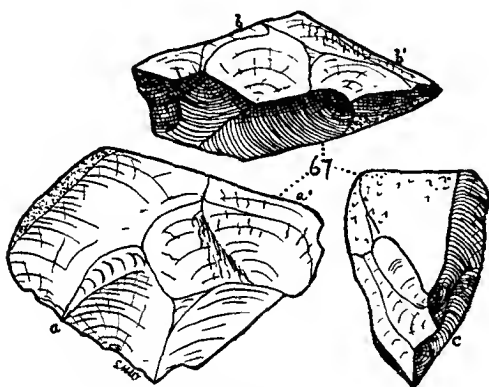


FIG. 67.—SIDE CHOPPER. SCALE $\frac{1}{2}$.

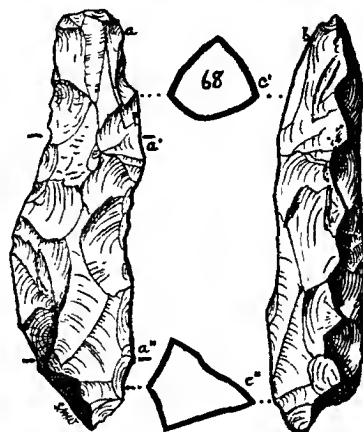


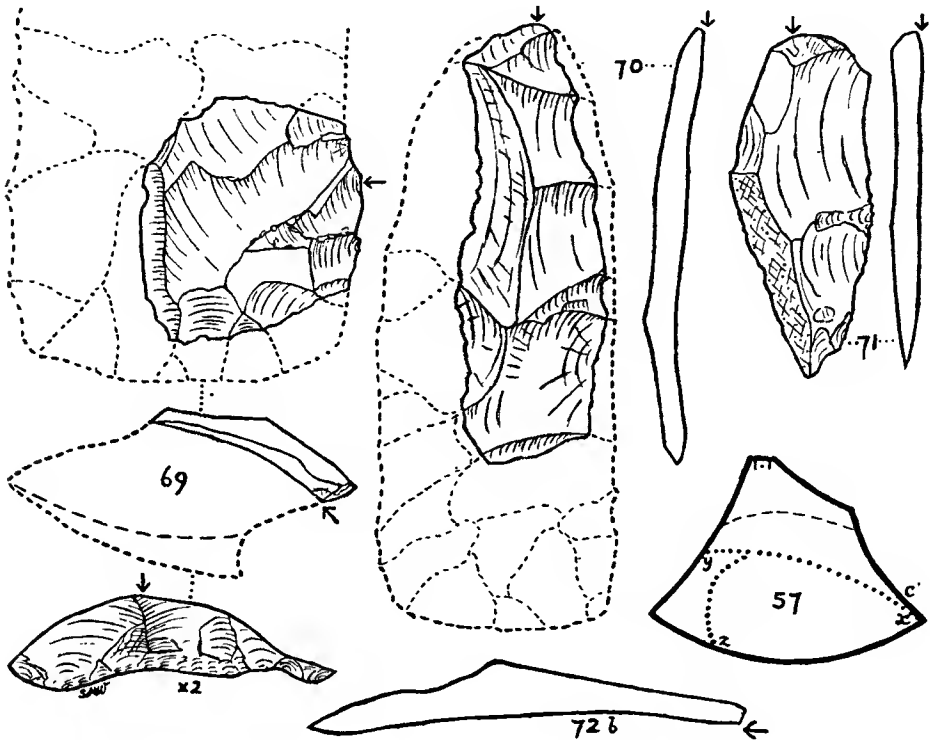
FIG. 68.—PICK (?) SCALE $\frac{1}{2}$.

prove a successful cutting instrument, it is necessary to keep the centre to a reasonable degree of thinness; a much greater thickness, and consequently greater strength, being permissible, however, in certain classes of tools than in others—notably in the narrower adzes.

Thinness of blade is attained by the striking of incurved thinning flakes, as partially described on a previous occasion (*Journ. Roy. Anthropol. Inst.*, Vol. xlv, 1914, p. 423). They are of two classes, lateral and longitudinal; both these classes (but perhaps more particularly the former) represent a high degree of skill in the art of the flaker, but it was nevertheless attained as early as the Late Chelles stage, if not earlier, and has been employed to a greater or lesser degree in the flaking of stone implements throughout all subsequent ages. It is not normally employed by the Brandon flint-knappers in pursuance of their craft, because the work they are engaged upon does not need it.¹

¹ In the diagrams the arrows indicate the position of the bulb of percussion, and consequently that of the inner face in the side views.

69. Lateral incurved thinning flake, which has cut (as it should) more than half-way across the blade, and picked up the ends of facets coming from a different direction from its own; in this case the principal facet chances to be longitudinal, but a smaller one is the more usual lateral facet struck from the opposite side edge. The face of the axe from which it was struck is suggested by the dotted lines. The imaginary cross-section indicates the manner in which it was struck through the thickness of the axe. It has a strongly faceted butt, shown on twice the scale. This specimen was selected on account of its being thicker at the butt



FIGS. 69-72.—THINNING FLAKES. SCALE $\frac{1}{2}$.

than a thinning flake should be, and in consequence showed the facetting of the butt to better advantage than most. The lower broken line through the cross-section indicates an ideal thinning flake, which is very thin at the edge where the blow is struck, but thickens to the centre where it has carried away an awkward hump in the middle. This variety of the facetting of the butt is simply a part of the flaking of the opposite face of the axe which has been carried away with the flake; $89 \times 93 \times 14.9$ mm. (*British Museum*).

The facetting of the butt in a flake industry, as on the celebrated Northfleet site, is executed on the striking plane of the core, for the purpose of maintaining the working angle at about 90° ; the flaking angle on these thinning flakes with faceted butts is the angle of the edge of an axe—commonly about

60° to 70°. These lateral incurved thinning flakes with faceted butts occur in great profusion.

70. Longitudinal thinning flake with lateral facets, shown with suggested outline of the axe from which it was struck. These are quite common on the site, but much less so than the lateral type; $169 \times 56 \times 13.5$ mm. (*British Museum*).

71. Pointed spear-like flake, with lateral facets; $132 \times 54.5 \times 11.8$ mm. (*British Museum*).

72. Edge view of another longitudinal thinning flake, which has removed a hump from the middle of an axe-blade to a thickness of nearly 22 mm.; $169 \times 51 \times 21.8$ mm. Number 57 was a very bad case of "hump," and a cross-section of this is placed near to 72 in order to show that the removal of the hump to this thickness would reduce the blade to fairly reasonable proportions of thickness.

From a comparison of the characters of the flakes with the method of flaking shown upon the axes themselves, I have come to the conclusion that even the finest and most symmetrical flakes were not made purposely as such, but that they were merely a by-product of the axe-making industry. Such flakes were doubtless often brought into use as minor tools, but that more were produced (so to speak) accidentally than were needed is indicated from the profusion with which they occur in the debris of the axe-workings. That these workings are not the accumulations of habitation sites is indicated not only by their character but also by their situation upon the steep inhospitable slopes of a mountain where no prehistoric man would be likely to take up his abode. He would dwell either on the plain below or under the shelter of the crags above: one can hardly credit a prehistoric metropolis upon a steep mountain side.

J.—Flakes of Other Forms.

It was not unusual for the larger rough flakes or spalls to be worked up into axes or adzes, of which a few examples have been given (53, 54 and 55). The largest flake I collected weighs $11\frac{3}{4}$ pounds, and measures $307 \times 185 \times 101$ mm., in spite of the fact that it is considerably reduced by bold secondary flaking in the preliminary stage of re-working it into an axe.

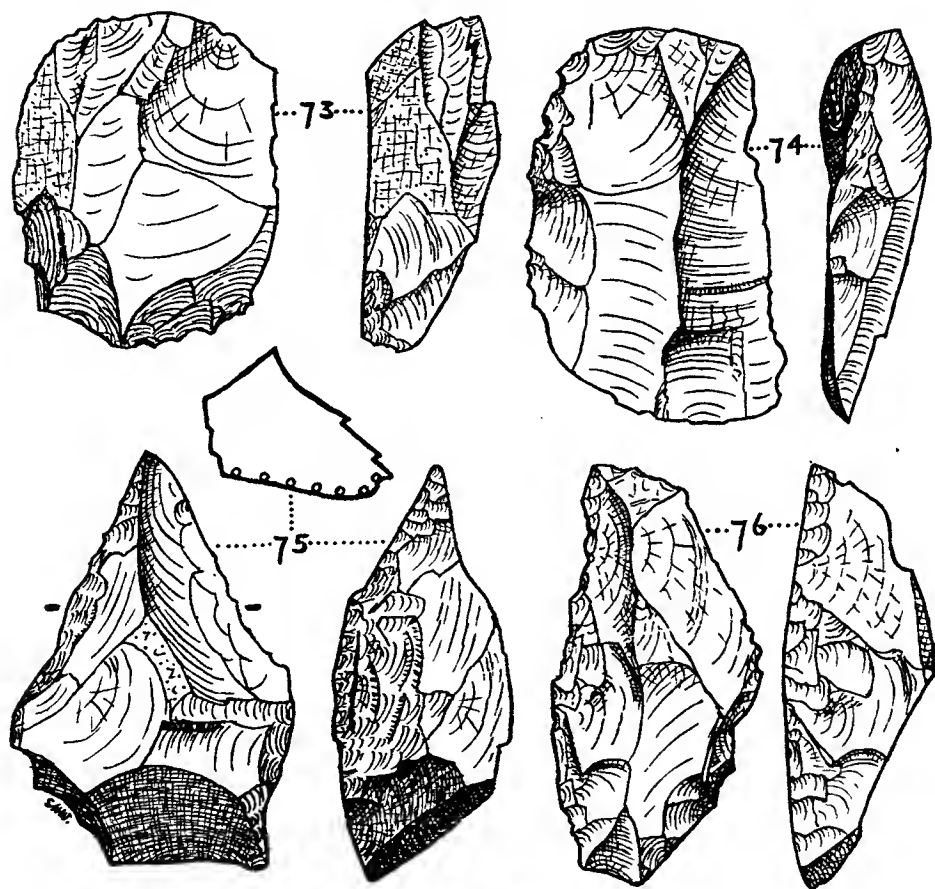
It seems scarcely worth while to illustrate the more ordinary forms of flake, which occur in every possible size and shape, and are equally indistinguishable (without the associated implements) from the work of Le Moustier, from that of the mediæval flint wall-builder, or from that of the modern knapper of Brandon.

The trouble of "plunging flakes" was occasionally experienced by our axemakers as by all stone-flakers of all times and all places. It is perhaps unnecessary to explain that a plunging flake is formed when the fracture, instead of following the intended course, plunges in a sweeping curve through the thickness of the stone, and comes out at the back; thus spoiling either the intended flake or the intended implement. The diagram 57, c, on page 359, is used to illustrate the plunging

flake, where an intended transverse thinning flake, xy , has struck too deeply into the stone, and swept out at the back along the curve xz .

K.—Trimmed Flakes and Scrapers.

These types are very poorly represented on the chipping-floors, and the few that I have so far found are so rough and unsatisfactory as useful implements that they may be little more than waste pieces of chipping.



FIGS. 73-76.—TRIMMED FLAKES. SCALE $\frac{1}{2}$.

73. This more nearly resembles a normal scraper than any, but it is made from a roughly broken piece and not from a flake; $86 \times 70.5 \times 34$ mm. 74. A possible but unconvincing side-scraper made from a flake; $103 \times 61 \times 27.5$ mm. 75. A rough flake-point, resembling the Chellian precursors of the Mousterian form; $112 \times 74 \times 44.8$ mm. 76. This also might be matched among the ruder Mousterian or pre-Mousterian forms; it is probably nothing more than a waste piece; $108 \times 51 \times 35.8$ mm.

If the dwelling-sites of the axe-workers can be identified and excavated, a more satisfactory group of domestic tools will probably be found.

L.—Cores and Hammer-Stones.

As confirming the apparent absence of a flake industry on the site, I have not been able to identify a satisfactory group of cores: the material seems to consist almost exclusively of axes in the making, and the flakes struck off in the process.

The apparent scarcity of hammer-stones is a little puzzling: although I looked for them, I only found one. It is much worn by prolonged use, and weighs nearly six pounds. Perhaps a good deal of the work was executed by reverse flaking against blocks of scree as anvil stones, and not by the blows of hammer-stones.

VI. THE DATING OF THE INDUSTRY.

Taking our axes as we find them—that is to say, in their unfinished state—it may be noted from the figures that the prevailing type is that of the “pointed-butt,” which is considered in Scandinavia to belong to an early stage of the Late Neolithic, immediately before the introduction of the dolmen. A certain number show a decided tendency towards the broad thin-butted form (although they still retain the lozenge cross-section), which is considered in Scandinavia to belong to the earliest dolmen period. This type with the broad and thin butt passes into the simple form of the double-axe, which is by no means uncommon on our site.

The Anglesea specimen in the Jermyn Street Museum is a typical example of the pointed-butt, while judging from the photograph the Foel Llwyd axe would appear to be generally similar.

These correspondences with Scandinavian types must be applied with caution, as the later forms of Scandinavian stone axe do not occur as native work in this country, and with us earlier forms continued in use as late as the round barrow and beaker stage, if not into still later times. For my own part, I think that some latitude must be allowed for the difficulties and uncertainties inseparable from the working of stone, and that we cannot expect the stone types to be so reliable as the style of working in more plastic materials such as metals or pottery, which are so much more easily controlled.

All students of the subject will notice striking similarities between Graig-lwyd work and that of the flint axe factories of Grimes Graves and Cissbury. We see the same unfinished axes of unsatisfactory shape discarded in every stage of flaking. There are Palæolithic resemblances, plunging flakes, breakages and hinge-fractures producing similar forms, and the same technique of lateral and longitudinal thinning flakes with faceted butts. While the better finished axes and adzes that are present are in many cases of closely corresponding types.

A tumulus not far from our site at Penmaenmawr has yielded numerous cinerary urns and “food vessels” of the Bronze Age (later than the beaker stage), with a small stone cup and two bronze pins (J. P. Earwaker, *Archæol. Cambrensis*, 5th Ser., Vol. viii, 1891, pp. 33-37, Plates and Figures). A large flake of our “felsitic”

rock was used as the cover for one of the cinerary urns, but of course one does not know whether it may be contemporary work, or whether it may have been picked up accidentally as a suitable flat stone. These remains are in the Chester Museum.

A second tumulus, enclosing a kist-vaen, appeared to be of even later date, and included amongst other remains a primitive mill-stone made of the same rock (R. Newstead, *Journ. Architect. Archæol. and Historical Assoc.*, Chester, N. S., Vol. vi, 1899, pp. 145-151, 1 Plate).

For satisfactory evidence of dating one must await the results of spade-work on the site. At the foot of the mountain slope it is quite possible that the chipping-floors, which are elsewhere superficial, may be buried and preserved under a covering of talus, and excavation in that situation might bring to light the fauna of the period. On the moor top, the chipping-floors come into close proximity to a turbary, and trenching there might enable a correlation to be made with the flora of the time, and with the succession of climatic changes established by Dr. F. J. Lewis.

VII. NEIGHBOURING PREHISTORIC REMAINS.

On the top of the eastern slopes of Graig-lwyd, and just under the crag itself, there is a natural platform in the mountain side which is occupied by a group of hut-circles. About one-fifth of a mile further to the south-east there is another well-preserved hut-circle. All these hut-circles show a depression in the middle, are outlined by stones, and are usually about 20 to 30 feet in diameter.

They greatly resemble the hut-circles associated with the British hill-fortresses of the country, and so may be much later than the axe-workers, but, as they are within the area of the axe-workings, one would like to see them excavated.

Carneddau.—On the Ordnance Map this name is applied to a small stone circle south of Graig-lwyd, which I am disposed to think belongs to the "sacred circle" group, and is probably an outlier of the Maeni Hirion remains. A few yards to the west there is, however, a prehistoric cairn, or stony tumulus, to which I think the name should properly belong, as "*Carneddau*" means a cairn or pile of stones, and not a stone circle. Some of the worked stones from the axe factory were used in making this cairn, which appears to have been opened in search of treasure in pre-scientific days.

There is another, and much smaller, circle of rather large stones a little nearer to Graig-lwyd. It appears to be neither a hut-circle nor a "sacred circle," but is probably the ruins of a sepulchral monument.

Maeni Hirion.—The main circle of this group of megalithic monuments is situated nearly half a mile from the nearest point of the axe-workings. One naturally assumes that these remains are later.

Monoliths, Kist-vaens, Tumuli, etc., are abundant on the moors within a few miles of the axe factory, but one again assumes, rightly or wrongly, that they are of later date.

The well-dated Bronze Age tumulus of Penmaenmawr is noted under Section VI. (For further information, *vide* W. Bezant Lowe, *The Heart of Northern Wales*, 1912.)

VIII, THE IDENTIFICATION OF THE GRAIG-LWYD AXES WHEN FOUND ELSEWHERE.

It is obvious that there must have been a very large output of stone axes from the Graig-lwyd factory. There is little doubt that many of these axes would travel for hundreds of miles in the course of barter and along trade routes, during hunting expeditions or hostile raids, tribal migrations, and the like.

One of the most interesting problems suggested by our site is the endeavour to trace Graig-lwyd axes when found in other localities, like the example already referred to from Anglesea.

So far as published descriptions are concerned, axes made of "felsite" or "felstone" are, of course, the most hopeful. But if such axes had been accidentally preserved from the effects of weathering, they might very possibly be classed under the indefinite term "greenstone." There is a published record of a polished axe from Anglesea made of what is described as "white magnesian stone"; even this may quite possibly be a mistaken identification of the Graig-lwyd rock if greatly weathered to a comparatively soft, porous, white condition.

For a first superficial comparison, the close-grained Graig-lwyd rock, when unweathered, is blue, or very rarely greenish. It is mostly composed of a compacted mass of minute crystals of felspar, etc., with interstitial quartz, which to the naked eye appears to be amorphous, and of decidedly "felsitic" appearance, although more strictly it is rather andesitic than felsitic. Embedded in this ground-mass are scattered visible crystals of felspar, the greater number of which are less than 5 mm. in longer diameter, with very few exceeding 7 mm.; they are usually quite narrow. Most commonly these crystals are from 15 to 30 mm. apart but occasionally they are closer, and give the rock a speckled appearance. On exposure to weathering, it first assumes a thin, brownish coat, but finally becomes deeply white and very porous. At first the visible felspar crystals become "kaolinized," and are converted into a white amorphous mass; but on further weathering the kaolin is washed out, and they are represented by vacant spaces.

If the material of which an axe is made does not conform to these superficial characters, it is not worth more careful examination from the point of view of its possible association with the Graig-lwyd factory.

I feel that it scarcely needs saying that the possibilities of interest in the Graig-lwyd site are rather suggested as problems for future investigation than revealed in the present paper, which must only be regarded as a "preliminary note" on a subject which I hope may prove of some importance in throwing further light on the early history of this country.

In conclusion, it only remains for me to thank those who have so kindly and generously assisted in various ways, notably Colonel C. H. Darbishire ; Mr. Ivor E. Davies ; Mr. H. C. Sargent, F.G.S. ; and Mr. Jones, the tenant of Graig-lwyd farm.

I am also greatly indebted to Dr. H. H. Thomas, F.G.S., of the Geological Survey, for supplying the following notes to aid in the identification of Graig-lwyd axes :—

The rock with which we are concerned is an exceedingly fine textured member of the group of intrusions, so well known from the neighbourhood of Penmaenmawr.

On a freshly broken surface the rock is usually smooth, micro-crystalline in structure, and of a pale bluish-grey colour that is reminiscent of many of the older rhyolites of North and South Wales. It evidently weathers superficially with some rapidity, the external portions becoming pale grey with minute limonitic spots on exposure to atmospheric agencies. On flakes, the weathered skin is usually about 2 to 3 millimetres in thickness, and a local concentration of iron oxides in the outermost part is often a noticeable feature ; sometimes it is sufficient to form a thin but distinct limonitic layer.

The fresh rock is extremely fine grained, all the minerals being of microscopic dimensions and not discernible by the eye without aid. They can, however, be readily distinguished when the rock is subjected to a magnification of about 25 diameters, more particularly if thin sections are employed. A thin section shows that the rock consists of sparsely distributed small phenocrysts of turbid plagioclase felspar, small rounded crystals and crystal-groups of augite, and still smaller decomposed crystals of rhombic pyroxene in a micro-crystalline matrix of quartz and felspar with rods and isolated crystals of magnetite.

With the aid of thin sections there should be little difficulty in identifying a specimen of the Graig-lwyd rock, as microscopically its characters are quite distinctive, but in the case of an implement it is seldom desirable to mutilate a specimen by cutting from it such a section, and therefore identification by some other means would be of considerable advantage.

The mode of weathering and texture of this rock are highly characteristic features, but they are characteristic not only of the Graig-lwyd mass, but also of a number of other widely distributed felsitic rocks of somewhat different nature ; mode of weathering and texture must not, therefore, by themselves be taken as furnishing conclusive evidence of identity.

The micro-structure, helped by some conception of the mineral contents of the rock, taken in conjunction with the colour, manner of fracture, and mode of weathering, may collectively be regarded as safe criteria.

It has been found possible, after having studied the rock in thin sections, to gain a good idea of the mineral contents and to recognize many features in the solid stone even when in a weathered state. This is accomplished by placing on as smooth a surface of the stone as can be selected a drop of clove oil through which the rock is observed by reflected light with the aid of a moderately low-power objective.

The weathered surface is extremely porous, takes up the oil readily and becomes translucent. Although weathered, and some of the component minerals decomposed, the micro-structure of the rock is practically unaltered. It is possible in such a case to discern the small phenocrysts of turbid plagioclase and the little greenish grains and crystals of augite and rhombic pyroxene ; particularly noticeable are the little rods and isolated crystals of magnetite. On a freshly fractured smooth unweathered surface the constituent minerals are of course more readily detected.

Oil is preferable to water because of its higher refractive index, and it is easily removed by the application of methylated spirit, petrol, benzol or any other similar solvent.

This method can be employed without any injury to the specimen, and will, it is thought, often enable an identification to be made where uncertainty would otherwise exist.

MISCELLANEA.

PROCEEDINGS OF THE ROYAL ANTHROPOLOGICAL INSTITUTE, 1919.

January 27th, 1919.

Annual General Meeting. (See p. 1.)

February 26th, 1919.

Ordinary Meeting at 50, Great Russell Street.

Sir EVERARD IM THURN, President, in the Chair.

The minutes of the last meeting were read and confirmed.

The election of the following as Ordinary Fellows of the Institute was announced: Mr. T. V. Hodgson, Rev. W. H. Hudspeth, Dr. John Brownlee, Mr. V. R. Raman Menon, Mr. H. C. Abraham, Miss R. M. Bayliff, Mr. K. M. Cornish, Mr. Sidney Spokes, Mr. J. S. Fraser, Mrs. W. C. Watson and Mr. C. W. Hesling.

Mr. MONTGOMERY MCGOVERN gave his address on "Formosan Anthropology."

The paper was discussed by Professor KEITH, Dr. STEWART MACKINTOSH and the PRESIDENT.

The thanks of the meeting were conveyed to Mr. MCGOVERN for his very interesting paper, and the Institute adjourned till March 11th.

March 11th, 1919.

Joint Meeting with the Prehistoric Society of East Anglia, at the Rooms of the Geological Society, Burlington House.

At 3 p.m.—The afternoon programme was provided by the Prehistoric Society of East Anglia, when the President of the Society, Mr. REGINALD SMITH, gave his Presidential Address on "Foreign Relations in the Neolithic Period."

Mr. LEWIS ABBOTT exhibited Flint Implements from the Cromer Forest Bed and the Admiralty Site, Whitehall, and other specimens were exhibited and described.

At 5.15—Sir EVERARD IM THURN, President of the Institute, in the Chair.

The minutes of the last meeting were taken as read and signed.

Mr. HAZZLEDINE WARREN read his paper on "The Dating of Surface Flint Implements and the Evidence of the Submerged Peat Surfaces," illustrated by specimens and lantern slides.

The paper was discussed by Mr. A. S. KENNARD, Dr. YOUNG, Mr. REGINALD SMITH, Mr. HOWARD, and Mr. WARREN replied.

The thanks of the meeting were given to Mr. WARREN for his very interesting paper.

Mr. A. L. LEWIS read a "Note on an Allée Couverte," discovered in the course of making trenches for the defence of Paris, communicated by M. LEON COUTIL, with observations by Mr. LEWIS himself and lantern illustrations.

The thanks of the meeting were accorded to M. COUTIL and Mr. LEWIS for their interesting communication.

April 8th, 1919.

Ordinary Meeting at 50, Great Russell Street.

Sir EVERARD IM THURN, President, in the Chair.

The minutes of the last meeting were read and confirmed.

The election of the following as Ordinary Fellows of the Institute was announced: Mr. W. B. Brierley, Mr. C. T. East, Mr. W. M. McGovern, Mr. F. A. Stacpole.

Lieut. E. W. P. CHINNERY read his paper on "Reactions of Certain New Guinea Primitive People to Government Control." The paper was discussed by Dr. SELIGMAN, Captain BARTON, Miss M. E. DURHAM, and the PRESIDENT, and Lieut. CHINNERY replied.

The best thanks of the meeting were given to Lieut. CHINNERY for his very interesting and important paper, and the Institute adjourned till May 13th.

May 13th, 1919.

Ordinary Meeting, at the Rooms of the Geological Society.

Sir EVERARD IM THURN, President, in the Chair.

The minutes of the last meeting were read and confirmed.

The PRESIDENT gave his address on "Dwellings and Costumes of Old Fiji," illustrated by specimens and lantern slides.

Observations were made by Dr. MAUDSLAY, who proposed a hearty vote of thanks to the PRESIDENT, and by Dr. CORNEY, who seconded the motion, which was carried by acclamation.

The Institute then adjourned till May 20th.

May 20th, 1919.

Ordinary Meeting at 50, Great Russell Street.

Sir EVERARD IM THURN, President, in the Chair.

The minutes of the last meeting were read and confirmed.

The election of the following as Ordinary Fellows was announced: Mr. D. Jenness, Mr. G. Alan Simmons, Mr. W. E. Armstrong, Dr. C. H. East, Major T. B. Nicholls, Lieut. A. G. Pape.

Captain A. M. HOCART read his paper on "The Early Fijians," illustrated by lantern slides.

The paper was discussed by Dr. CORNEY, Major ST. JOHNSON, Dr. SELIGMAN, Dr. KEITH and Mr. S. H. RAY, and Captain HOCART replied. The PRESIDENT also made observations on the paper, and the hearty thanks of the meeting were accorded to Captain HOCART for his most interesting and suggestive paper.

June 17th, 1919.

Ordinary Meeting at 50, Great Russell Street.

Professor KEITH, Past President, in the Chair.

The minutes of the last meeting were read and confirmed.

The election of the following as Ordinary Fellows of the Institute was announced: Captain C. A. W. Monckton, Captain E. T. N. Grove, Dr. George M. Sanderson, Mr. W. Bonser.

Mr. REID MOIR read his paper on "Flint Implements from the Middle Glacial Gravel at Ipswich," illustrated by lantern slides.

The paper was discussed by Mr. REGINALD SMITH, Mr. BARNES, Captain SETON-KARR and Mr. REID MOIR replied.

The Chairman made some observations on the paper and on his motion, the hearty thanks of the meeting were given to Mr. REID MOIR for his important paper.

October 14th, 1919.

Ordinary Meeting at 50, Great Russell Street.

Sir EVERARD IM THURN, President, in the Chair.

The minutes of the last meeting were read and confirmed.

Lieut. CHINNERY read his paper on "Initiation Ceremonies of the Mambare and Kumusi Divisions, British New Guinea."

The paper was discussed by Dr. SELIGMAN, Captain MONCKTON, Dr. STRONG, Mr. WILLIAMSON, Mrs. ROUTLEDGE, Miss DURHAM, Mr. RAY and the PRESIDENT, and Lieut. CHINNERY replied.

The best thanks of the meeting were conveyed to Lieut. CHINNERY for his interesting paper, and the Institute adjourned till November 11th.

November 11th, 1919.

Ordinary Meeting at 50, Great Russell Street.

Sir EVERARD IM THURN, President, in the Chair.

The minutes of the last meeting were read and confirmed.

Mr. HAZZLEDINE WARREN read his paper on "A Stone-Axe Factory at Penmaenmawr," illustrated by specimens and lantern slides.

The paper was discussed by Mr. SARGENT, Mr. BARNES, Mr. HOWARD, Mr. WRIGHT, Mr. KENNARD, Mr. LEACH, and Mr. HUTCHINSON, and Mr. WARREN replied.

Observations on the making of stone implements by natives in South America were made by the PRESIDENT, and specimens of modern waste flakes from Penmaenmawr were exhibited by Mr. BARNES. The hearty thanks of the meeting were accorded to Mr. WARREN for his most interesting and important paper, and the Institute adjourned till November 25th.

November 25th, 1919.

Ordinary Meeting at the Rooms of the Institute.

Sir EVERARD IM THURN, President, in the chair.

The minutes of the last meeting were read and confirmed.

The election of the following as Ordinary Fellows of the Institute was announced :—Mr. H. Dyke Acland, Mr. A. B. Brewster, Miss L. E. Elliott, Mr. Sidney Hillelson, Mr. A. G. O. Hodgson, Mr. J. L. Hoffman, Mr. F. G. Jons, Mr. T. D. Kendrick, Captain G. T. Lloyd, Mr. H. A. Longman, Mr. J. P. Mills, Mr. Robert Mond, Mr. Thomas Parkin, Mr. C. Prideaux.

Dr. W. M. STRONG read his paper on "Personal Experiences in British New Guinea."

The paper was discussed by Mr. RAY, Dr. SELIGMAN, Mr. HUTCHINSON, Dr. MACKINTOSH and the PRESIDENT, and Dr. STRONG replied.

The best thanks of the meeting were accorded to Dr. STRONG for his very interesting and suggestive paper, and the Institute adjourned till December 9th.

December 9th, 1919.

Ordinary Meeting at the Rooms of the Institute.

Sir EVERARD IM THURN, President, in the chair.

The minutes of the last meeting were read and confirmed.

The election of the following as Ordinary Fellows was announced :—Rev. W. L. Broadbent, Mr. F. R. Hoare, Mr. J. Hornell, Mr. A. P. Lyons, Mr. M. Salaman, Mr. B. C. Wallis ; and of M. L'Abbé Breuil and Professor T. Zammit as Honorary Fellows.

An exhibit of Flint Implements was made by Mr. A. L. LEWIS, the specimens having been sent by M. LEON COUTIL (recently elected a Local Correspondent by the Institute), for the acceptance of the Institute, or in case they were not accepted by the Institute, for presentation to the British Museum.

Dr. W. McLEAN exhibited a number of specimens of bone and stone implements from a cave in Ross. The exhibit was discussed by Professor KEITH and Mr. HAZZLEDINE WARREN.

Mr. T. H. HUTTON read his paper on "The Leopard Men of the Naga Hills."

The paper was discussed by the PRESIDENT, Mr. GRANT BROWN, Colonel CUMMINS, Miss DURHAM, Dr. STANNUS, and Mr. HUTTON replied to various questions.

The best thanks of the Institute were accorded to Mr. HUTTON for his extremely interesting paper, and the PRESIDENT expressed the hope that the paper would be available for publication in the *Journal*.

Dr. McLEAN, Mr. LEWIS, and M. COUTIL were also thanked for their interesting exhibits. The Institute adjourned till January 13th, 1920.

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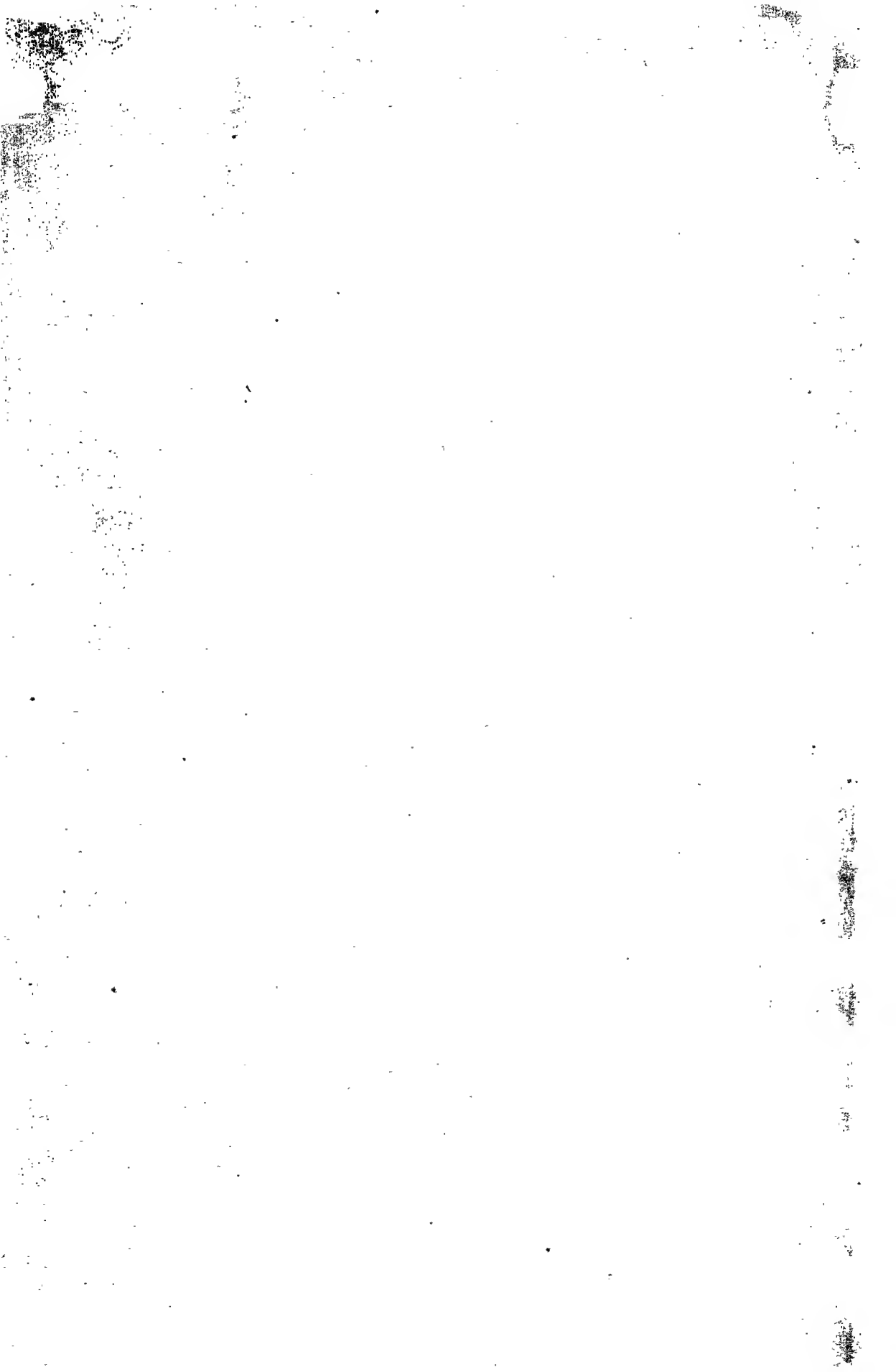
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